

Ton Duc Thang University

Center for Applied Information Technology



Course Lecture

FUNDAMENTALS OF INFORMATICS 2

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- Textbooks:

- Joan Lambert, MOS 2016 Study Guide for Microsoft Excel, 2017.

- References:

- Joan Lambert, MOS 2016 Study Guide for Microsoft PowerPoint, 2017.
- John Wiley, Microsoft Official Academic Course, Microsoft Word core 2016, 2016.

Ton Duc Thang university

Chapter 4

Manipulating data cells

Chapter 4. Manipulating data cells



4.1 Insert data in cells/ranges

4.2 Reuse data (copy/cut – paste)

4.3 Construct cells (insert/delete)

4.4 Apply Auto Fill

4.5 Find and replace data

Chapter 4. Manipulating data cells



4.1 Insert data in cells/ranges

4.2 Reuse data (copy/cut – paste)

4.3 Construct cells (insert/delete)

4.4 Apply Auto Fill

4.5 Find and replace data

4.1 Insert data in cells/ranges

1. Enter data in cells/ranges
2. Import data from the text file
3. Enter special characters

4.1 Insert data in cells/ranges

1. Enter data in cells/ranges
2. Import data from the text file
3. Enter special characters

1- Enter data in cells/ranges

- Numeric data:

- Enter numeric data as a general number. It may be formatted as a scientific number (Ex: 4.356E+24) if the value is large or is showed as number signs (###...) if the length is longer than the column width.
- Enter numeric data as a date format number: **mm/dd/yyyy** or **dd/mm/yyyy** depending on the date format of computer.
- Enter numeric data as a time format number: **hh:mm:ss**.

1- Enter data in cells/ranges

- Logical data:

- There are 2 values: **TRUE** or **FALSE**.
- We rarely enter logical data but get them from the formulas in cells.

- String data:

- Containing any text characters or beginning with the prime character (').

❖ *Notice: by default*

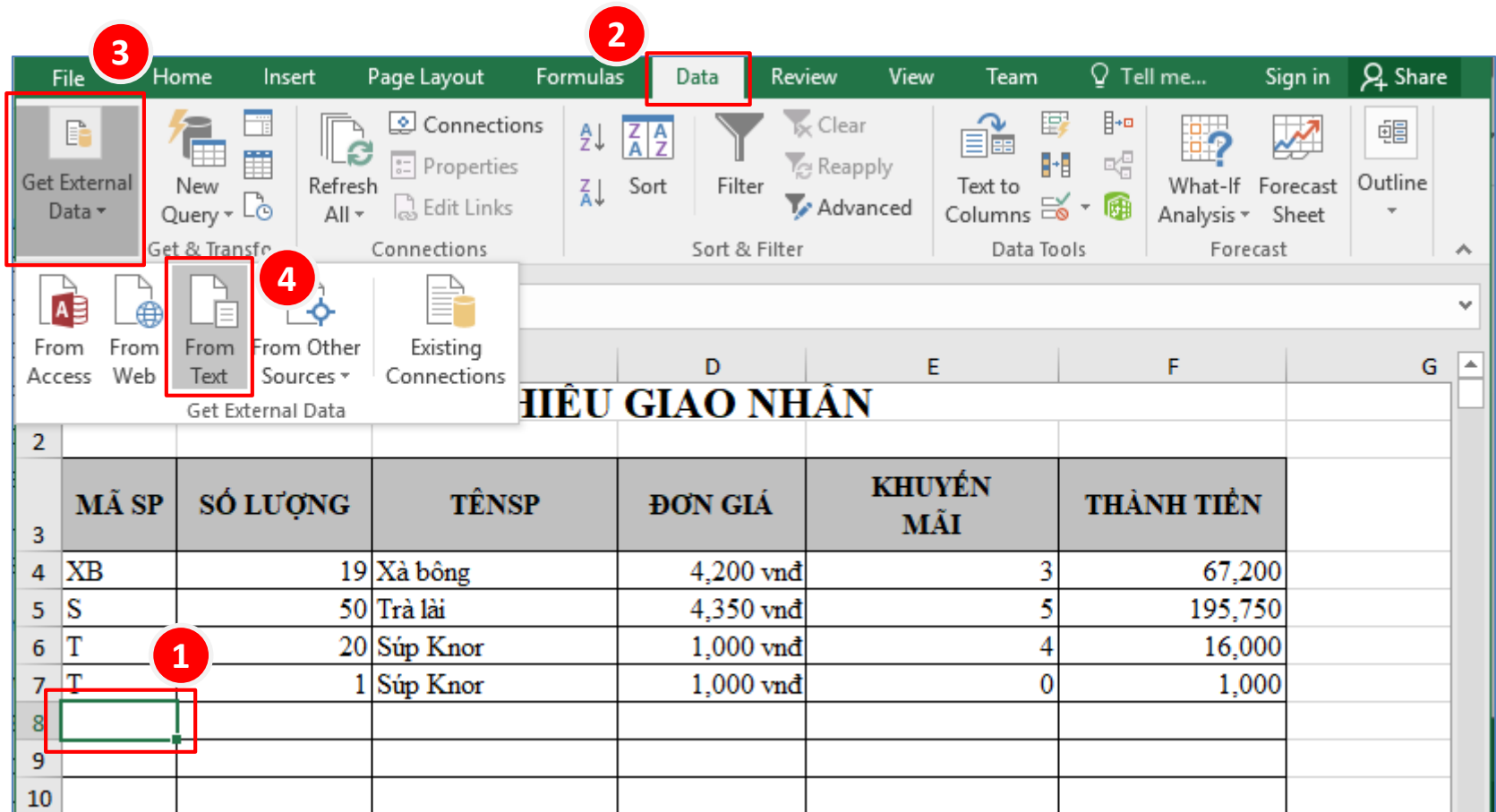
- Numeric data is right aligned in cells
- Logical data is center aligned in cells
- String data is left aligned in cells

4.1 Insert data in cells/ranges

1. Enter data in cells/ranges
2. Import data from the text file
3. Enter special characters

2- Import data from the text file

- **Steps:** Select the beginning cell (1) → tab **Data** (2) → **Get External Data** (3) → **From Text** (4) → in the **Import Text File** box, select the file.



The screenshot shows the Excel interface with the following elements highlighted:

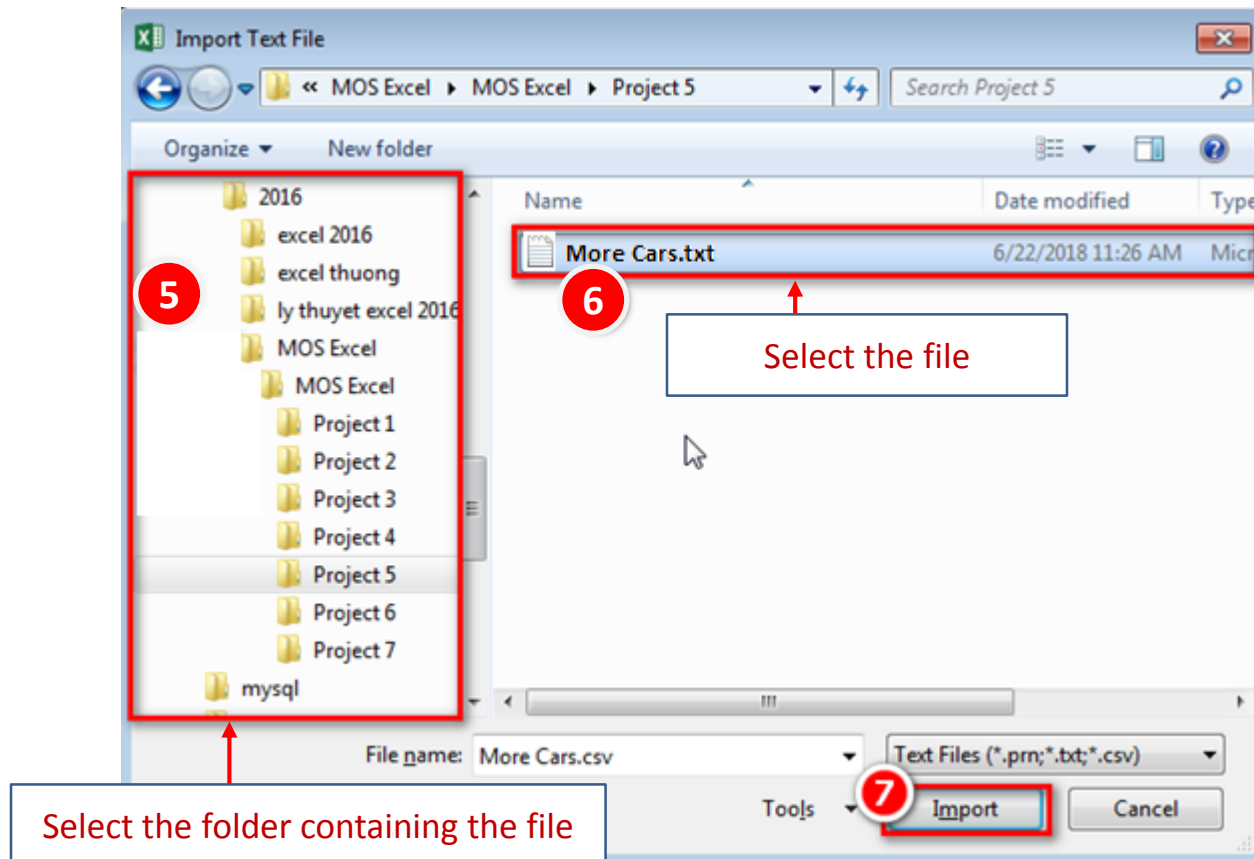
- 1:** A red box around cell A8 in the worksheet.
- 2:** A red box around the **Data** tab in the ribbon.
- 3:** A red box around the **Get External Data** button in the Data ribbon.
- 4:** A red box around the **From Text** option in the Get External Data dropdown menu.

The worksheet contains the following data:

	MÃ SP	SỐ LƯỢNG	TÊN SP	ĐƠN GIÁ	KHUYẾN MÃI	THÀNH TIỀN
4	XB	19	Xà bông	4,200 VNĐ	3	67,200
5	S	50	Trà lá	4,350 VNĐ	5	195,750
6	T	20	Súp Knor	1,000 VNĐ	4	16,000
7	T	1	Súp Knor	1,000 VNĐ	0	1,000
8						
9						
10						

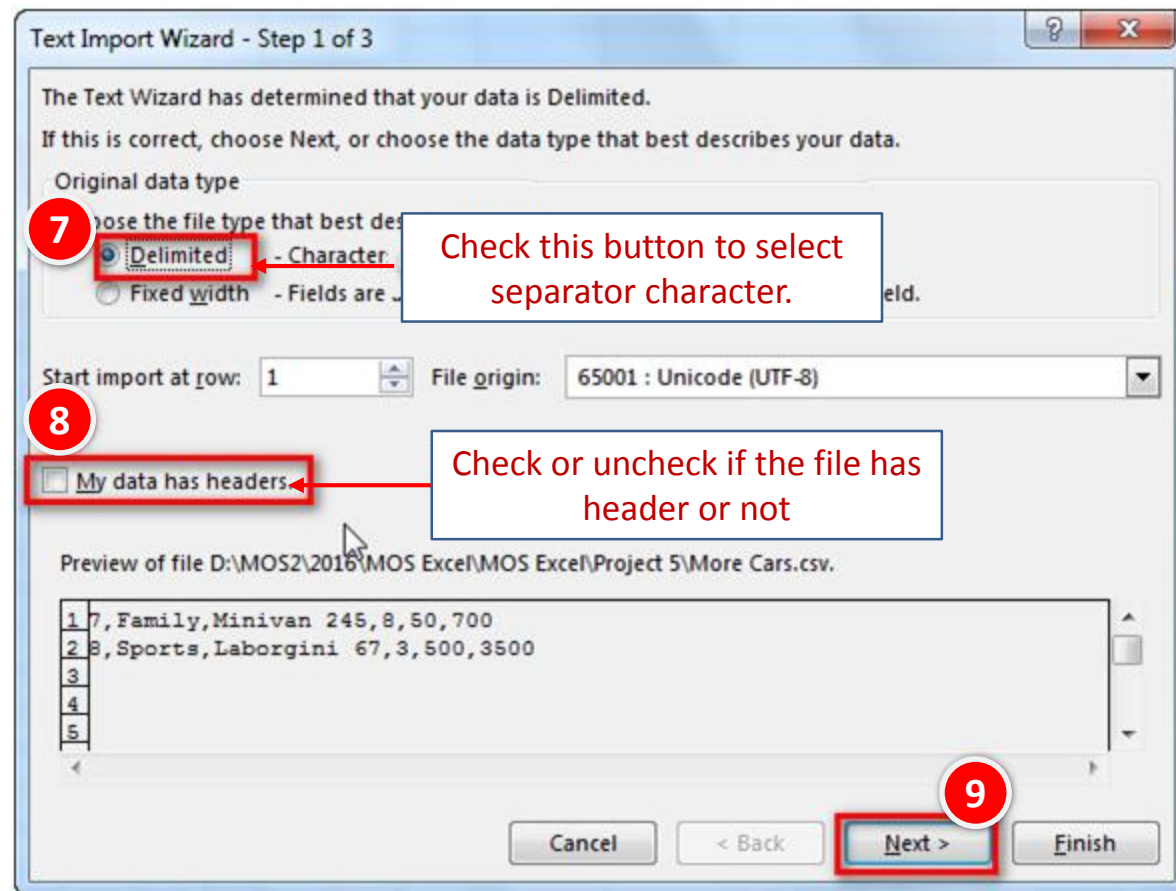
2- Import data from the text file

- **Steps (cont):** → select the text file (5) → **Import (6)** → the **Text Import Wizard** dialog box is popped up.



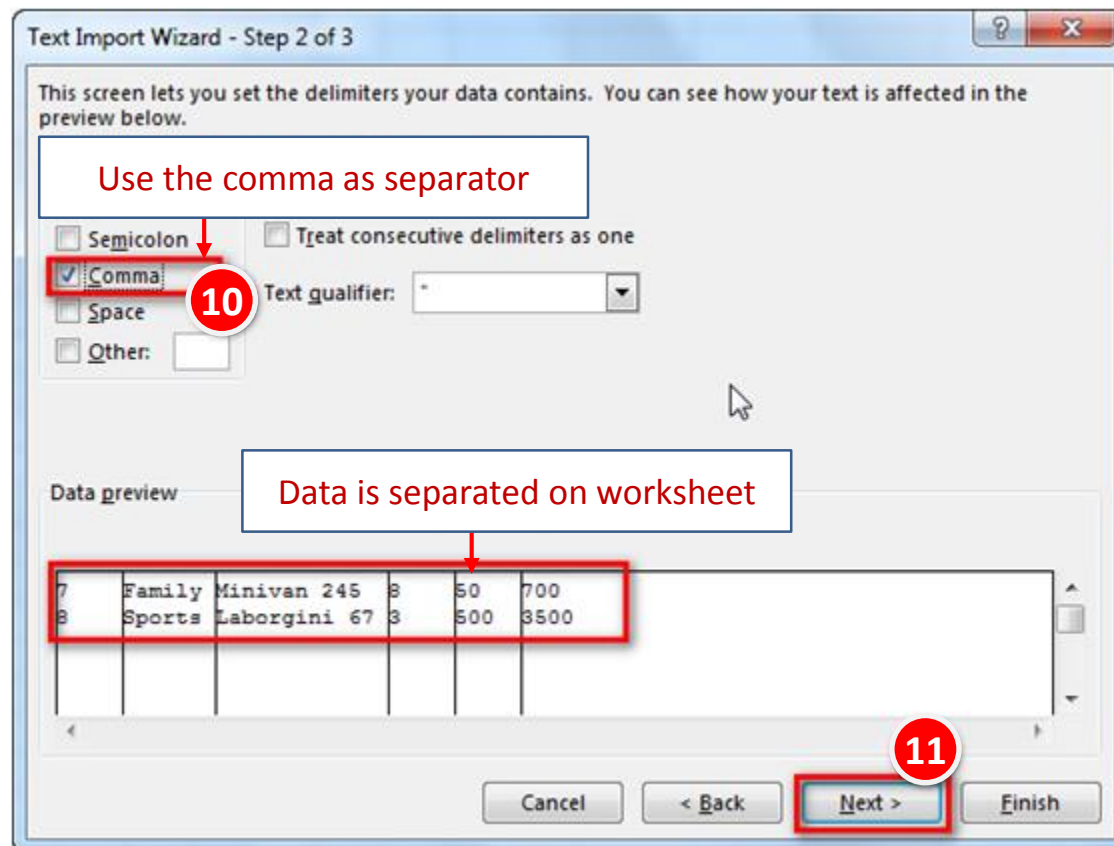
2- Import data from the text file

- **Steps (cont):** → click the **Delimited** check box (7) → select/unselect the **My data has headers** option (8) → **Next** (9)



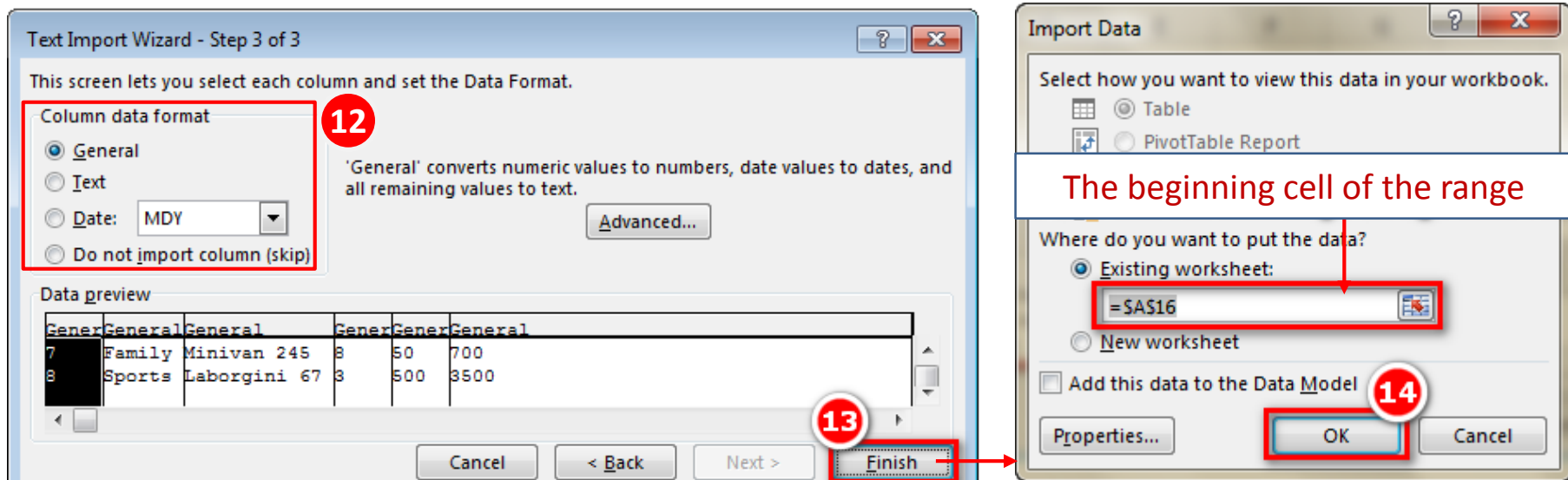
2- Import data from the text file

- **Steps (cont):** → Select the delimiter **(10)** → **Next (11)**



2- Import data from the text file

- **Steps (cont):** → Select the format in the **Column data format** area (12) → click **Finish** (13) → **OK** (14)



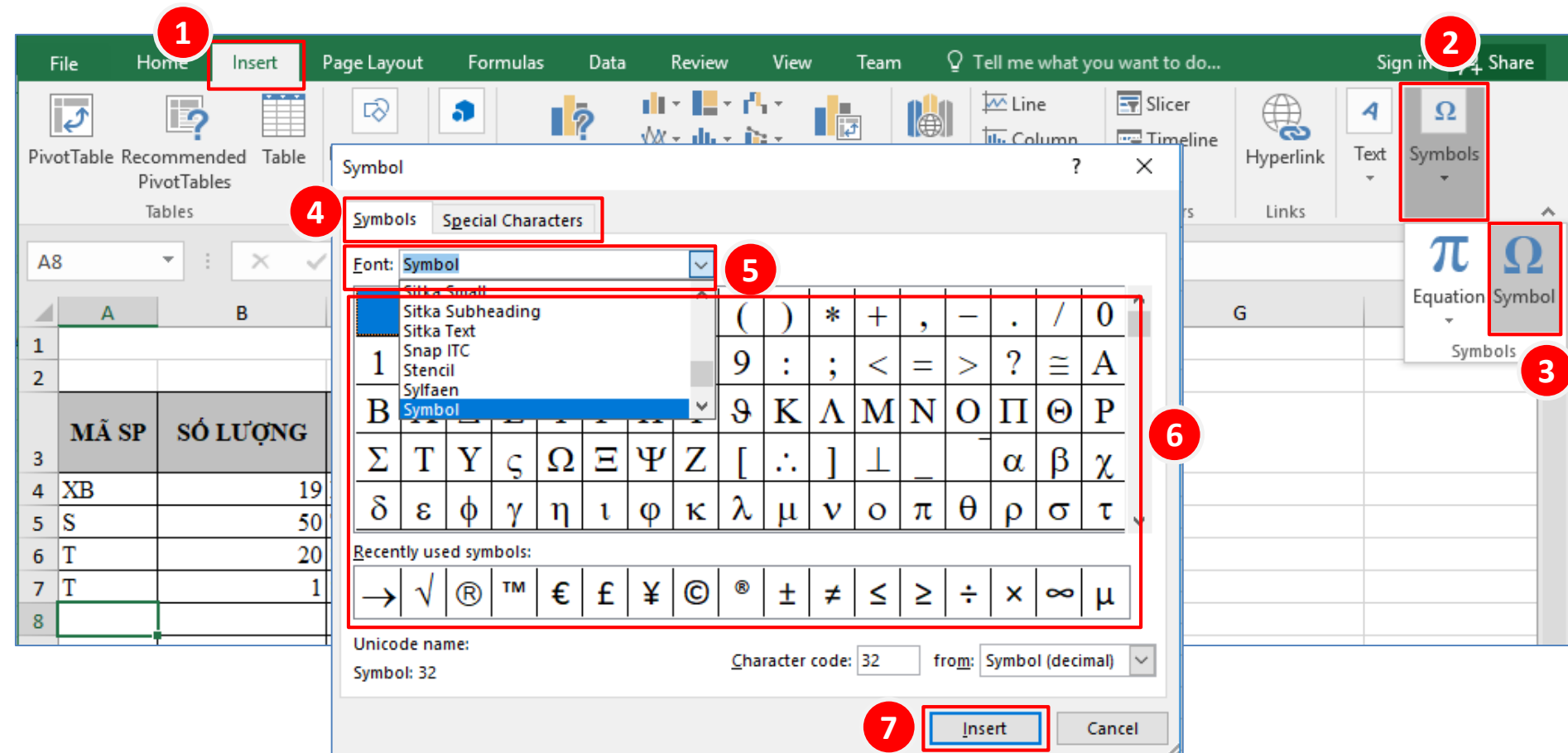
- **The result:** All data from the selected file is inserted in the existing worksheet from the selected cell or in new worksheet if you check the **New worksheet** option.

4.1 Insert data in cells/ranges

1. Enter data in cells/ranges
2. Import data from the text file
3. Enter special characters

3- Enter special characters

- Steps: Tab **Insert** (1) → Group **Symbols** (2) → **Symbol** (3) → tab **Symbols or Special Characters** (4) → select **Font** (5) → select the character (6) → **Insert** (7).



The screenshot illustrates the process of inserting a special character in Microsoft Excel. The 'Insert' tab is selected (1). The 'Symbols' group is highlighted (2). The 'Symbol' button is clicked (3). The 'Symbols or Special Characters' dialog box is open (4). The 'Font' dropdown is set to 'Symbol' (5). A character is selected from the grid (6). The 'Insert' button is clicked (7).

MÃ SP	SỐ LƯỢNG
XB	19
S	50
T	20
T	1

Chapter 4. Manipulating data cells



4.1 Insert data in cells/ranges

4.2 Reuse data (copy/cut – paste)

4.3 Construct cells (insert/delete)

4.4 Apply Auto Fill

4.5 Find and replace data

4.2 Reuse data (copy/cut – paste)

1. Copy data
2. Move data

1- Copy data

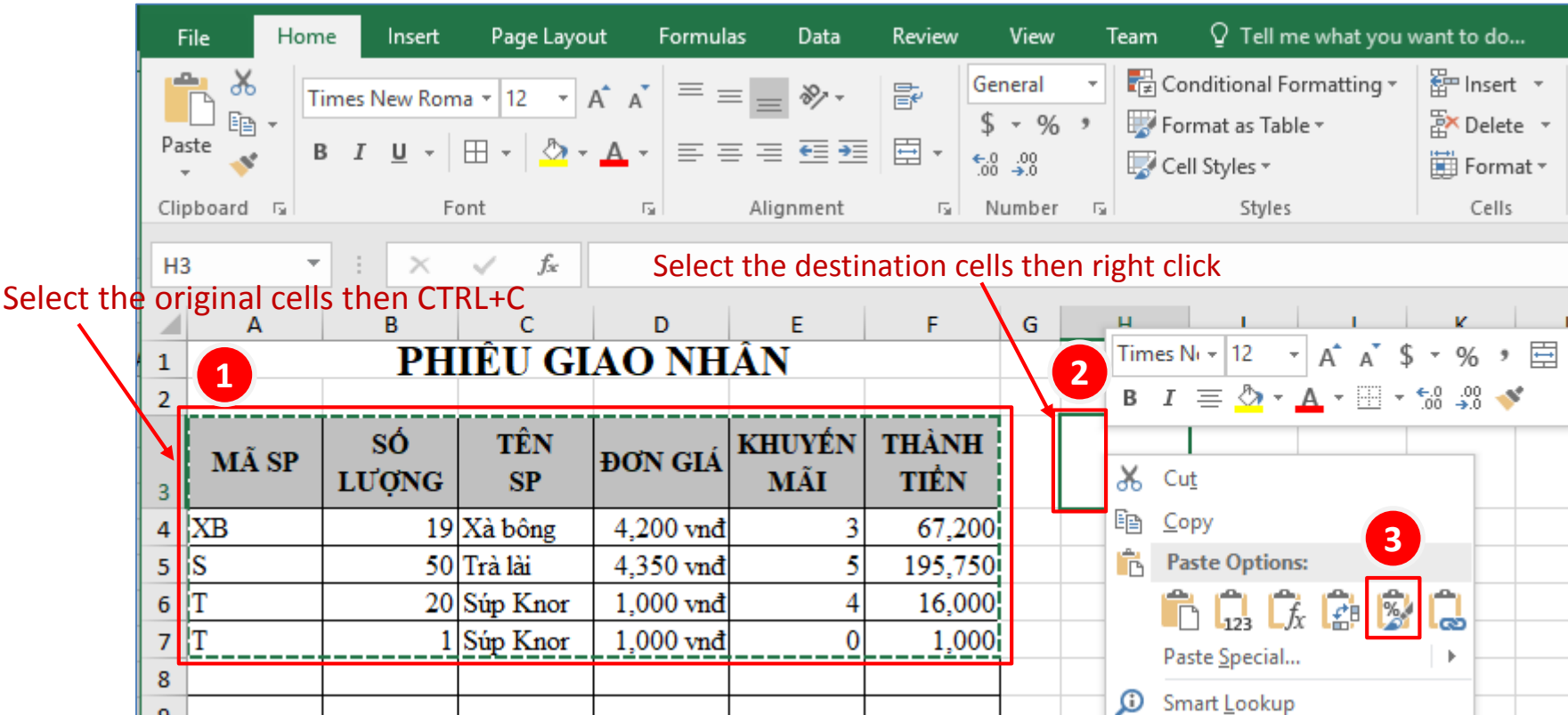
- **To copy data as usual:**
 - Select the original cells/ranges → tab **Home** → **Copy** (or **CTRL+C**) → select the destination cells/ranges → tab **Home** → **Paste** (or **CTRL+V**).
- Excel offers additional advanced techniques for pasting beside pasting **all as usual** to make it more useful for data manipulation through the **Paste** list, the **Paste Options** list or **Paste Special** feature.

1- Copy data

- **To paste only the formatting:** select the original cells/ranges → tab **Home** → **Copy (CTRL+C)** (1) → select the destination cells/ranges → Right click (2) → **Paste options: Formatting** (3)

Select the original cells then CTRL+C

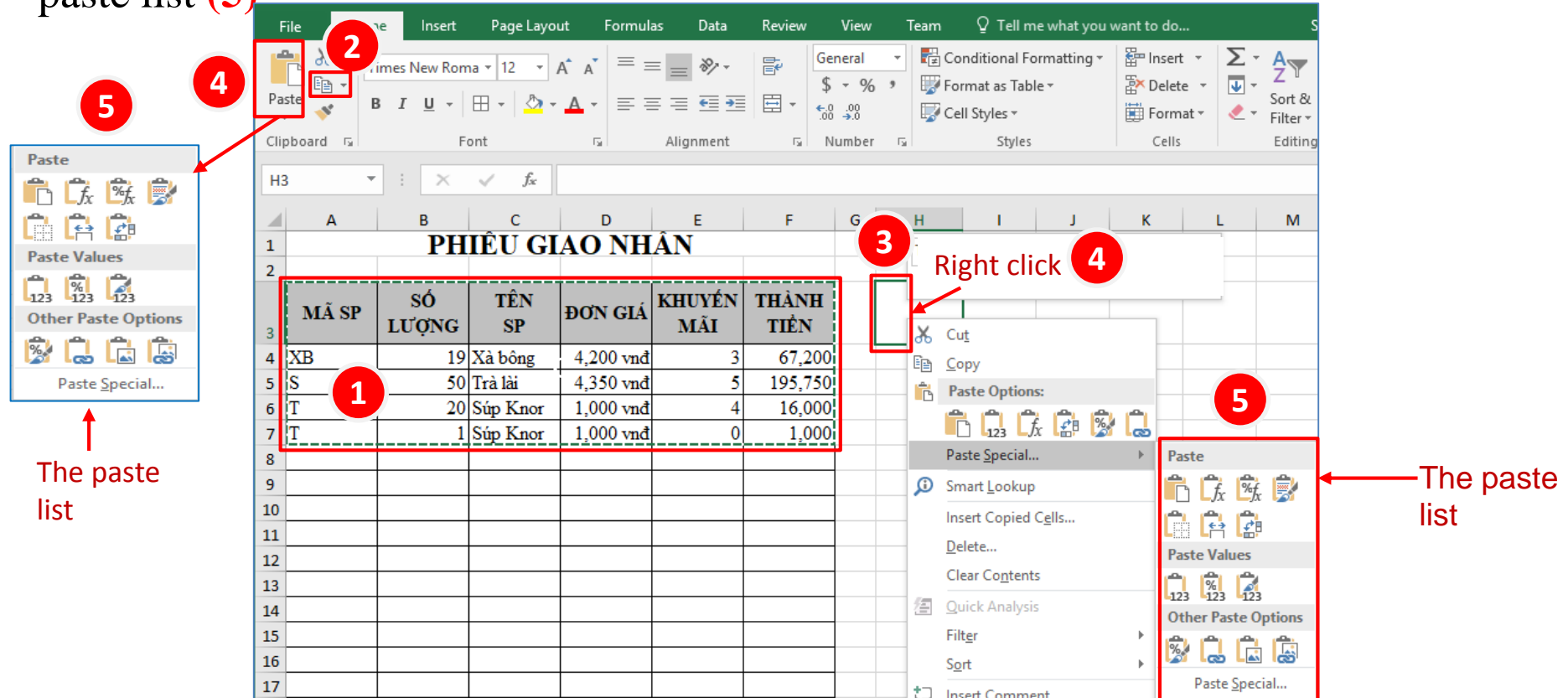
Select the destination cells then right click



MÃ SP	SỐ LƯỢNG	TÊN SP	ĐƠN GIÁ	KHUYẾN MÃI	THÀNH TIỀN
XB	19	Xà bông	4,200 VNĐ	3	67,200
S	50	Trà lời	4,350 VNĐ	5	195,750
T	20	Súp Knor	1,000 VNĐ	4	16,000
T	1	Súp Knor	1,000 VNĐ	0	1,000

1- Copy data

- **To paste values, formulas....:** select the original cells/ranges (1) → tab **Home** → **Copy** (or **CTRL+C**) (2) → select the destination cells/ranges (3) → tab **Home** → click the **Paste** list (or **Right click**) (4) → select the option in the paste list (5)

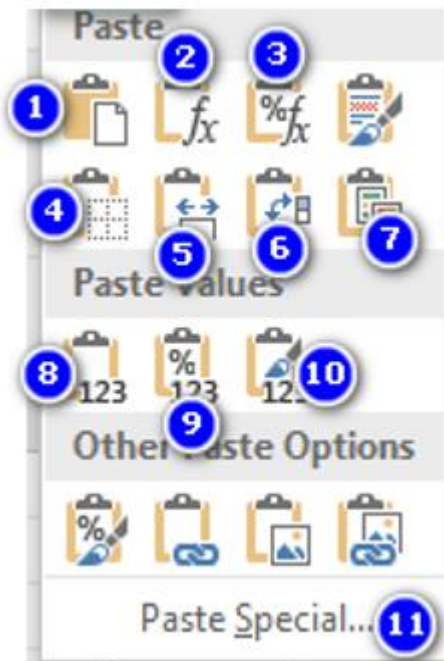


The screenshot illustrates the process of copying and pasting data in Microsoft Excel. The original data is selected in the range A4:F7 (labeled 1). The data is copied using the Copy button in the Home tab ribbon (labeled 2). The destination cell H3 is selected (labeled 3). The context menu is opened by right-clicking the destination cell (labeled 4). The Paste button is then clicked in the context menu (labeled 5). The 'Paste' list is shown on the left, and the 'The paste list' label points to it. The 'The paste list' label also points to the 'Paste' button in the context menu.

MÃ SP	SỐ LƯỢNG	TÊN SP	ĐƠN GIÁ	KHUYẾN MÃI	THÀNH TIỀN
XB	19	Xà bông	4,200 VNĐ	3	67,200
S	50	Trà lá	4,350 VNĐ	5	195,750
T	20	Súp Knor	1,000 VNĐ	4	16,000
T	1	Súp Knor	1,000 VNĐ	0	1,000

1- Copy data

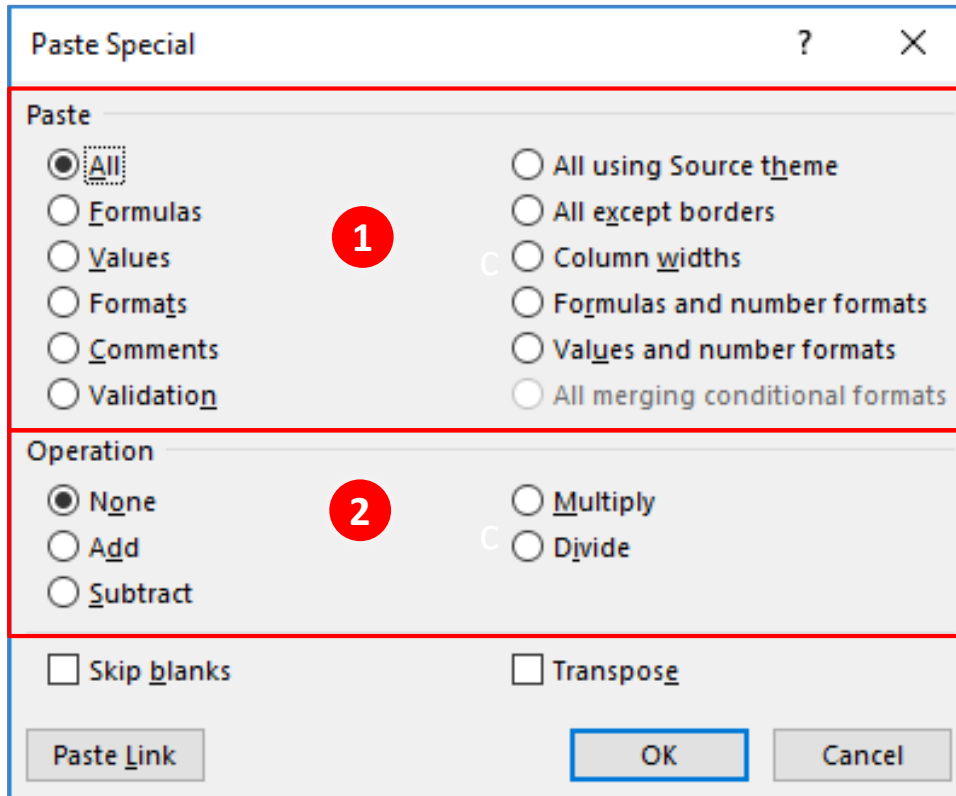
- The paste list:



- 1 - All
- 2 - Formulas only.
- 3 - Formulas & Number formatting.
- 4 - All without borders.
- 5 - All with the column widths.
- 6 - Transpose.
- 7 - All with conditional formatting.
- 8 - Values only.
- 9 - Values & Number formatting.
- 10 - Values & Source formatting
- 11 - More paste special options.

1- Copy data

- Other paste special options: Paste Special dialog box



- **Paste Options (1):** paste option list to choose which one you need.
- **Operation (2):** To add, subtract, multiply, or divide values in two data ranges
 - **Add:** The copied cells/range will be added to the cells/range you paste.
 - **Subtract:** The copied cells/range will be subtracted to the cells/range you paste.
 - **Multiply:** The copied cells/range will be multiplied to the cells/range you paste.
 - **Divide:** The copied cells/range will be divided to the cells/range you paste..

- **To move data from cells/range to another:**
 - **Move to the empty cells/range:** Select the original cells/ranges → tab **Home** → **Cut** (or **CTRL+X**) → select the destination cells/ranges → tab **Home** → **Paste** (or **CTRL+V**).
 - **Move to the none empty cells/range:** : Select the original cells/ranges → tab **Home** → **Cut** (or **CTRL+X**) → select the destination cells/ranges → tab **Home** → **Insert** → **Insert Cut Cells**.

Chapter 4. Manipulating data cells



4.1 Insert data in cells/ranges

4.2 Reuse data (copy/cut – paste)

4.3 Construct cells (insert/delete)

4.4 Apply Auto Fill

4.5 Find and replace data

4.3 Construct cells (insert/delete)

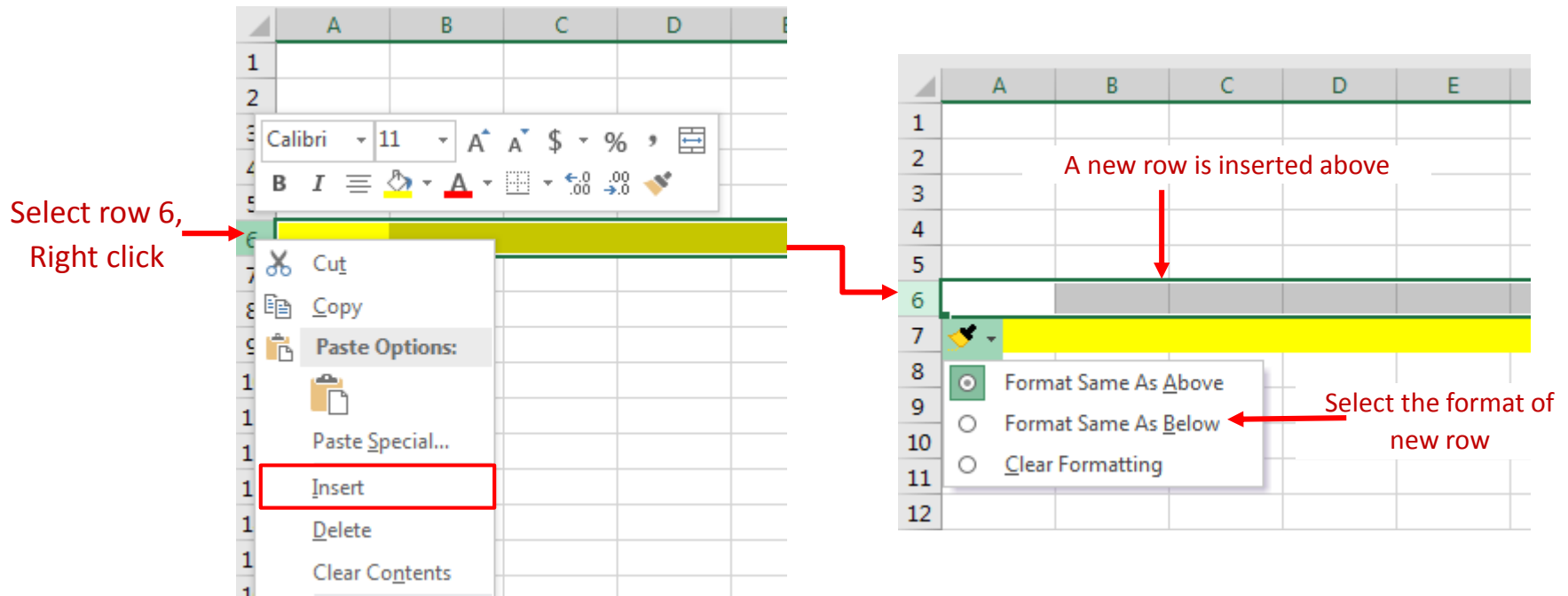
1. Insert empty cells/rows/columns
2. Delete cells/rows/columns
3. Insert the cut cells/range
4. Insert the copied cells/range

4.3 Construct cells (insert/delete)

1. Insert empty cells/rows/columns
2. Delete cells/rows/columns
3. Insert the cut cells/range
4. Insert the copied cells/range

1- Insert empty cells/rows/columns

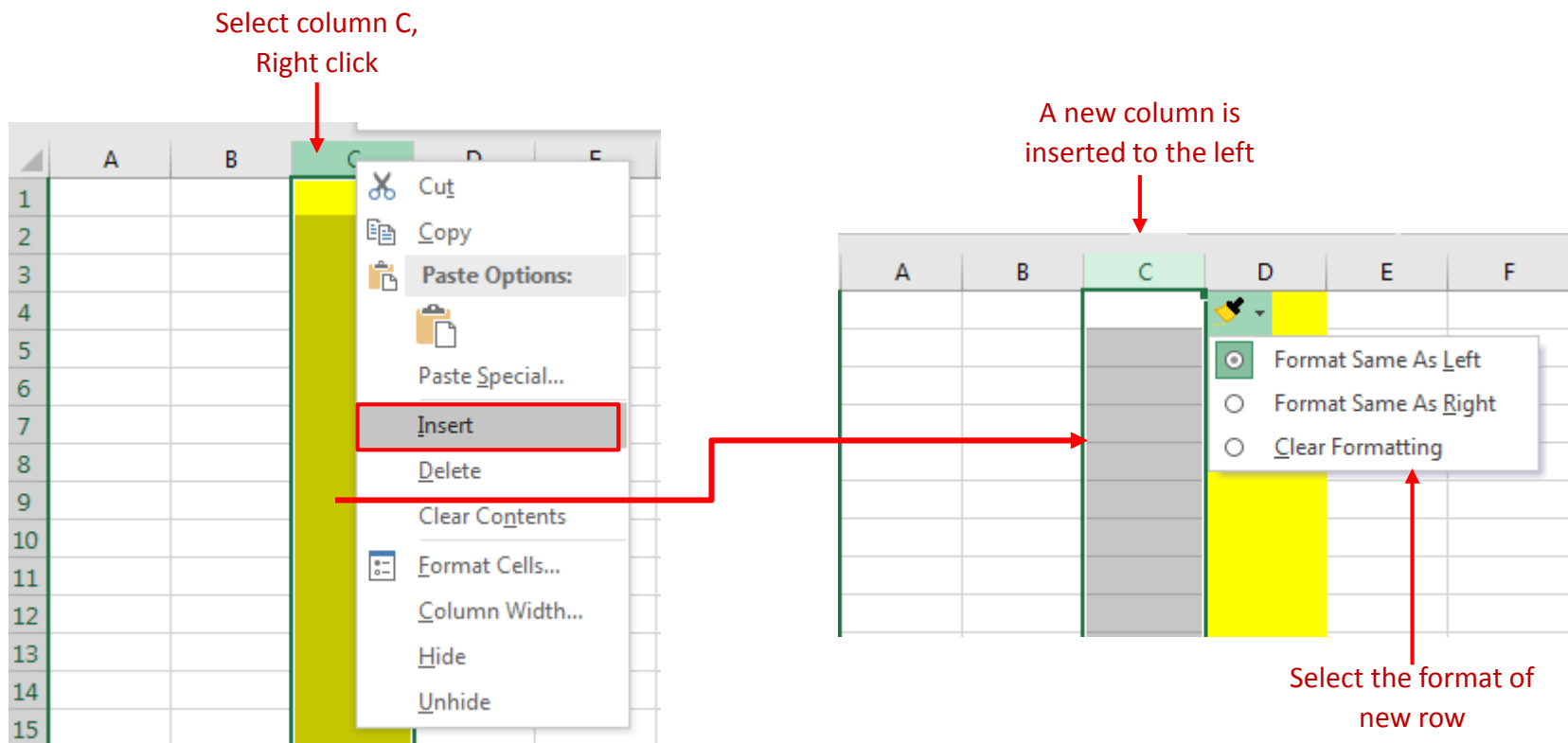
- **To insert a row on a worksheet:** Select the row → **Right click** → **Insert**
- **Example:** Insert a row at row 6 → **Select row 6**



1- Insert empty cells/rows/columns

- **To insert a column on a worksheet :** Select the column → **Right click** → **Insert**

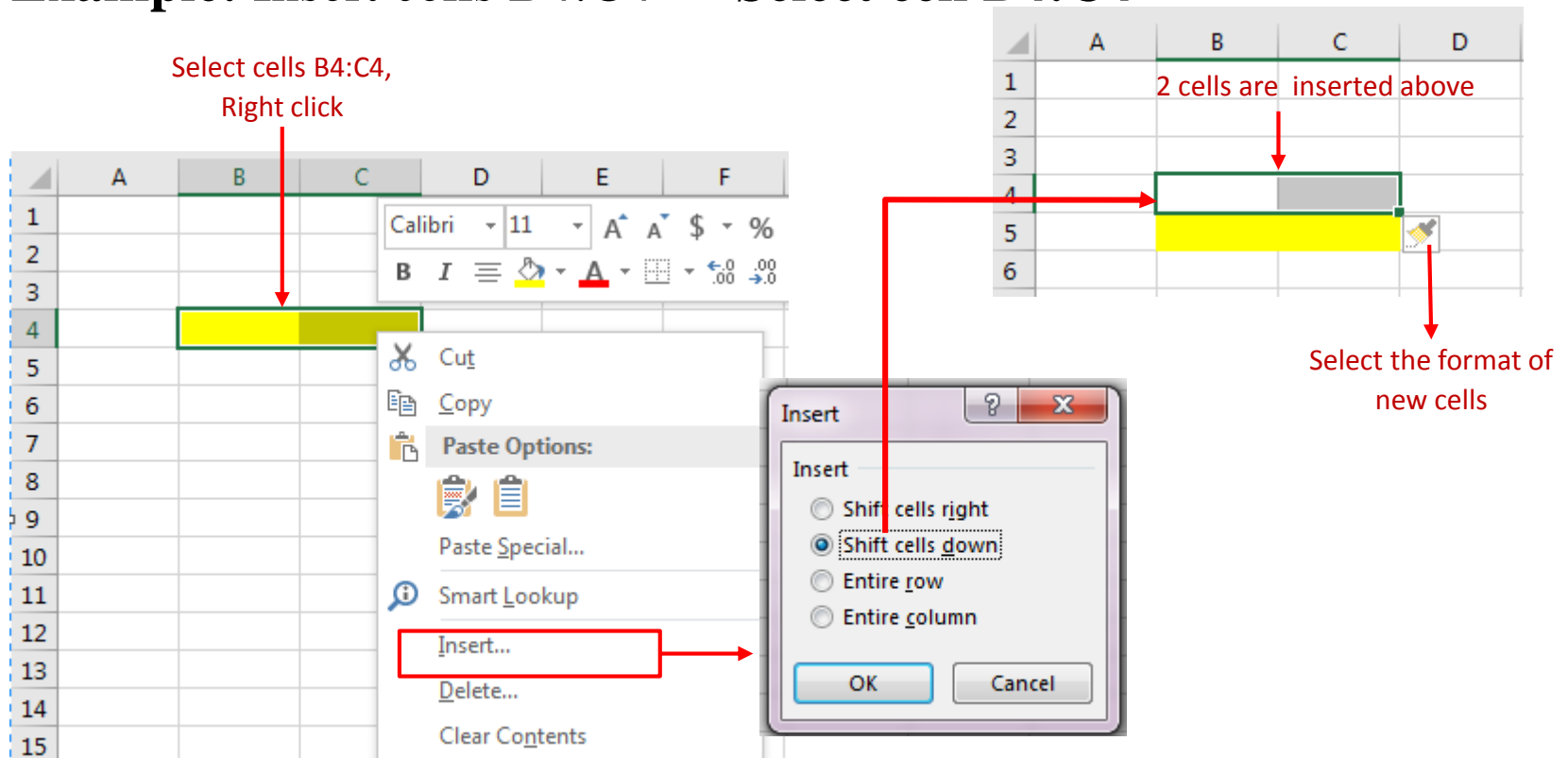
Example: Insert a column at column C → **Select column C**



1- Insert empty cells/rows/columns

- **To insert cells on a worksheet:** Select the cells → Right click → **Insert** → select **Insert Options**
- **Example:** Insert cells B4:C4 → **Select cell B4:C4**

Select cells B4:C4,
Right click

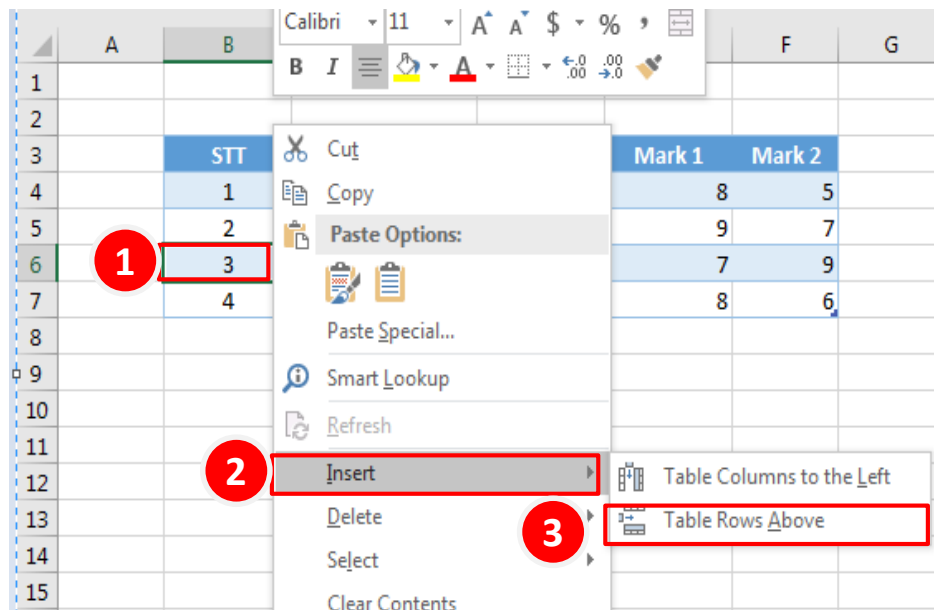


2 cells are inserted above

Select the format of new cells

1- Insert empty cells/rows/columns

- **To insert a row on a table** : Select a cell in the table → **Right click (1)** → **Insert (2)** → Select **Table rows above (3)**.
- **Example**: Insert a table row above the fourth row in the table → **Select cell B6**.

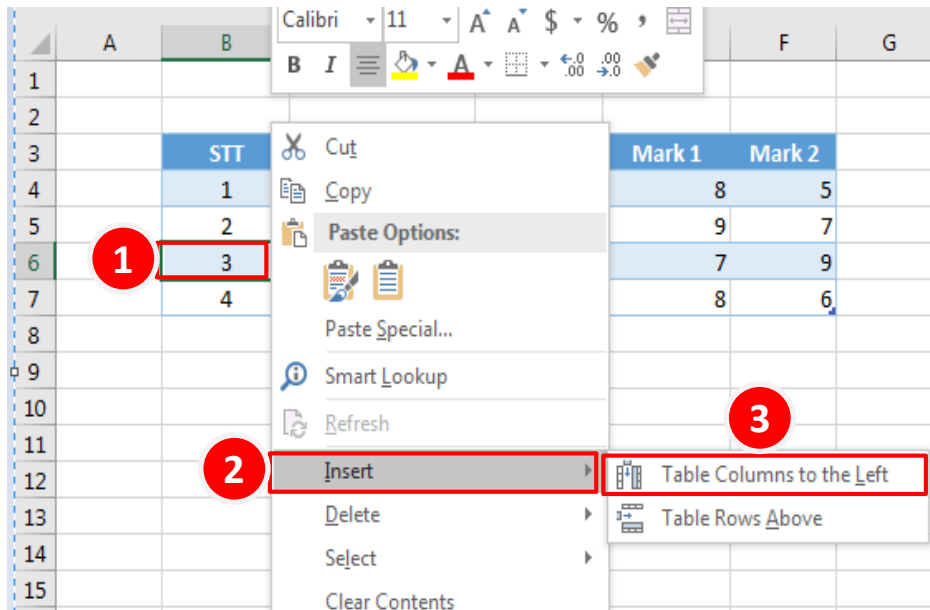


	A	B	C	D	E	F
1						
2						
3		STT	Full Name	DoB	Mark 1	Mark 2
4		1	Hung Nguyen	12/7/2000	8	5
5		2	Lan Le	4/5/2001	9	7
6						
7		3	Hanh Pham	6/14/2001	7	9
8		4	Ha Nguyen	10/17/2000	8	6

A new table row is inserted above

1- Insert empty cells/rows/columns

- **To insert a column on a table** : Select a cell in the table → **Right click (1)** → **Insert (2)** → Select **Table columns to the Left (3)**.
- **Example**: Insert a table column to the left the first one in the table → **Select cell B6**.

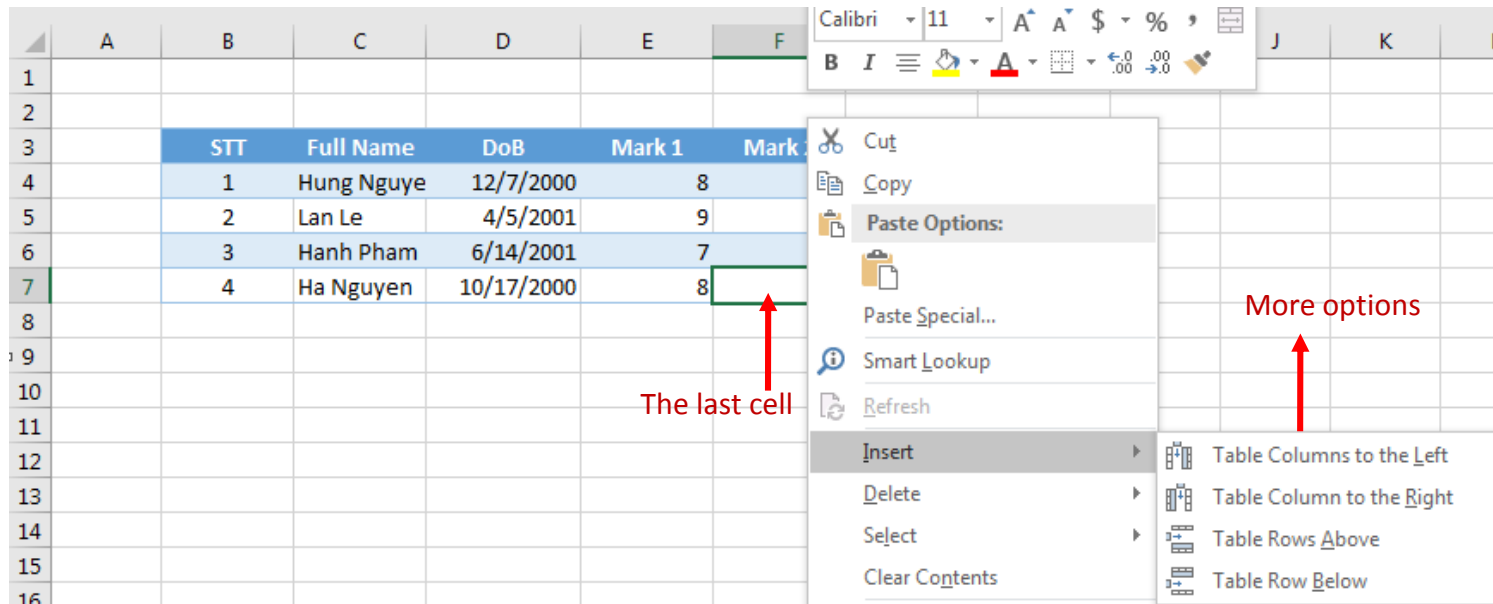


	A	B	C	D	E	F	G
1							
2							
3		Column	STT	Full Name	DoB	Mark 1	Mark 2
4			1	Hung Nguyen	12/7/2000	8	5
5			2	Lan Le	4/5/2001	9	7
6			3	Hanh Pham	6/14/2001	7	9
7			4	Ha Nguyen	10/17/2000	8	6

A new table column is inserted to the left

1- Insert empty cells/rows/columns

- **To insert a column/a row on a table:** If the selected cell is on the last row or last column, there are more options when you click the **Insert** command.
- **Example:** Select the last cell on the table.



The last cell

More options

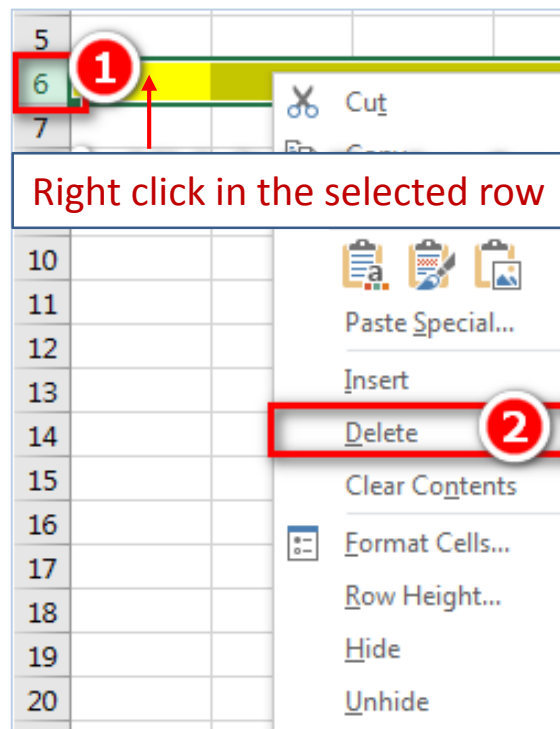
STT	Full Name	DoB	Mark 1	Mark 2
1	Hung Nguyen	12/7/2000	8	
2	Lan Le	4/5/2001	9	
3	Hanh Pham	6/14/2001	7	
4	Ha Nguyen	10/17/2000	8	

4.3 Construct cells (insert/delete)

1. Insert empty cells/rows/columns
- 2. Delete cells/rows/columns**
3. Insert the cut cells/range
4. Insert the copied cells/range

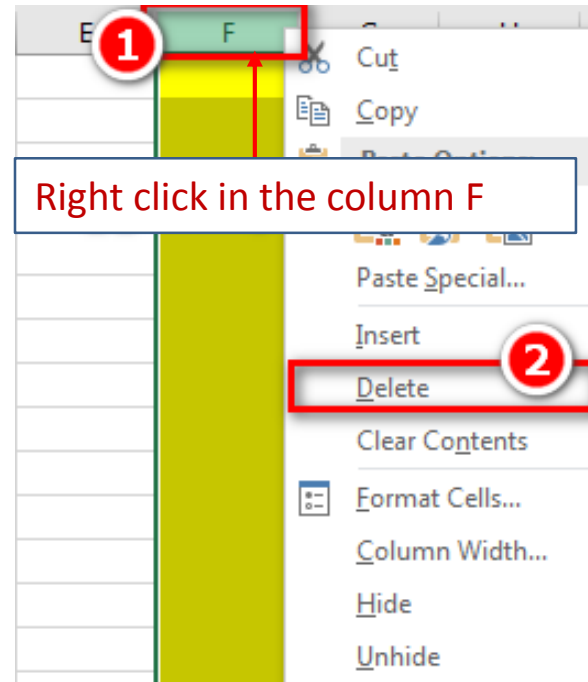
2- Delete cells/rows/columns

- **To delete a row on the worksheet:** Select the row → **Right click (1) → Delete (2)**
- **Example:** Delete row 6: **Select row 6 → Delete**



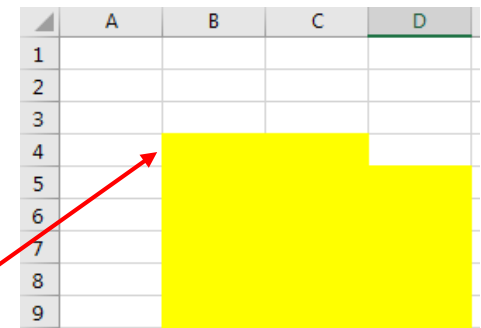
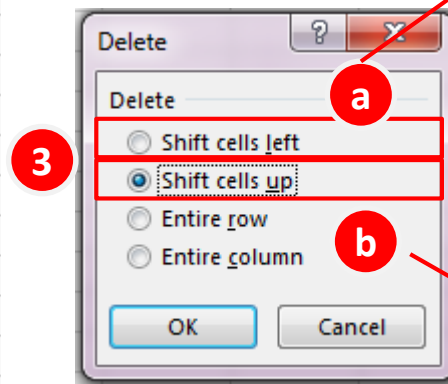
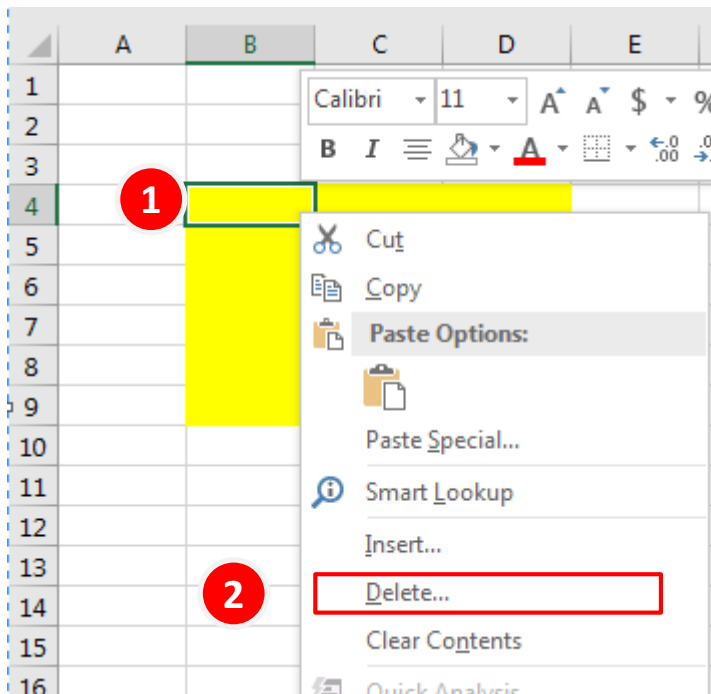
2- Delete cells/rows/columns

- **To delete a column on the worksheet:** Select the column
→ **Right click (1) → Delete (2)**
- **Example:** Delete column F → **Select column F → Delete**

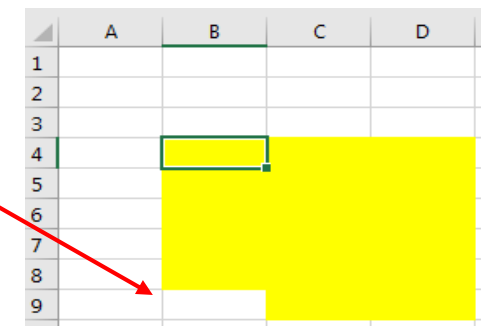


2- Delete cells/rows/columns

- **To delete cells/range on the worksheet:** Select cells/range → **Right click (1)** → **Delete (2)** → select the delete options **(3)**: **Shift cells left (a)** or the **Shift cells up (b)** check box

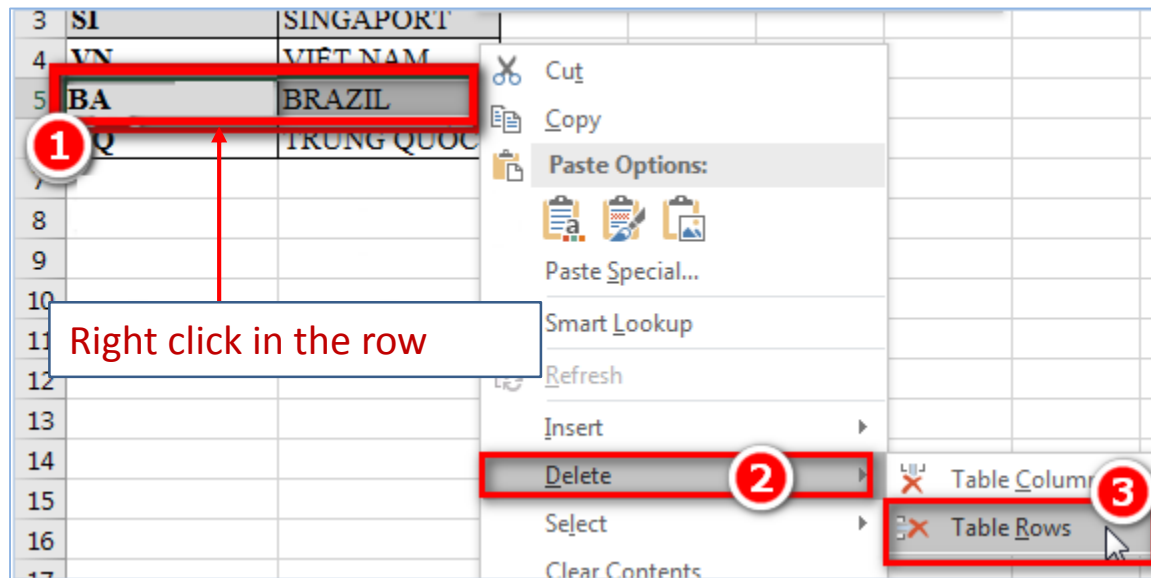


The result



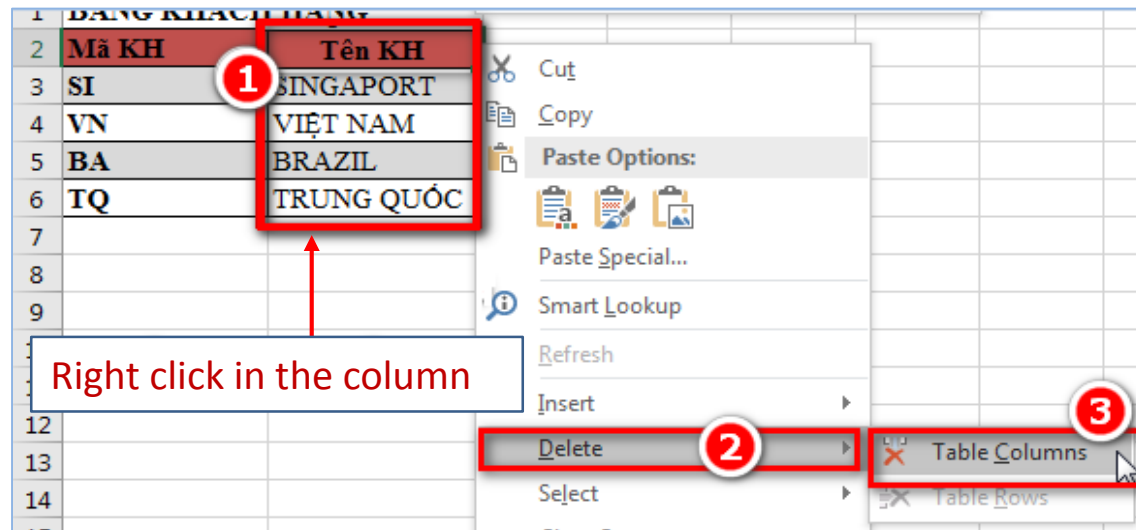
2- Delete cells/rows/columns

- **To delete a row on a table:** Select the row in the table → **Right click (1)** → **Delete (2)** → **Table Rows (3)**.
- **Example:** Delete the row on row 5 → **Select the row.**



2- Delete cells/rows/columns

- **To delete a column on a table:** Select the column in the table
→ **Right click (1)** → **Delete (2)** → **Table Columns (3)**.
- **Example:** Delete the **Tên KH** column → Select the **Tên KH** column.

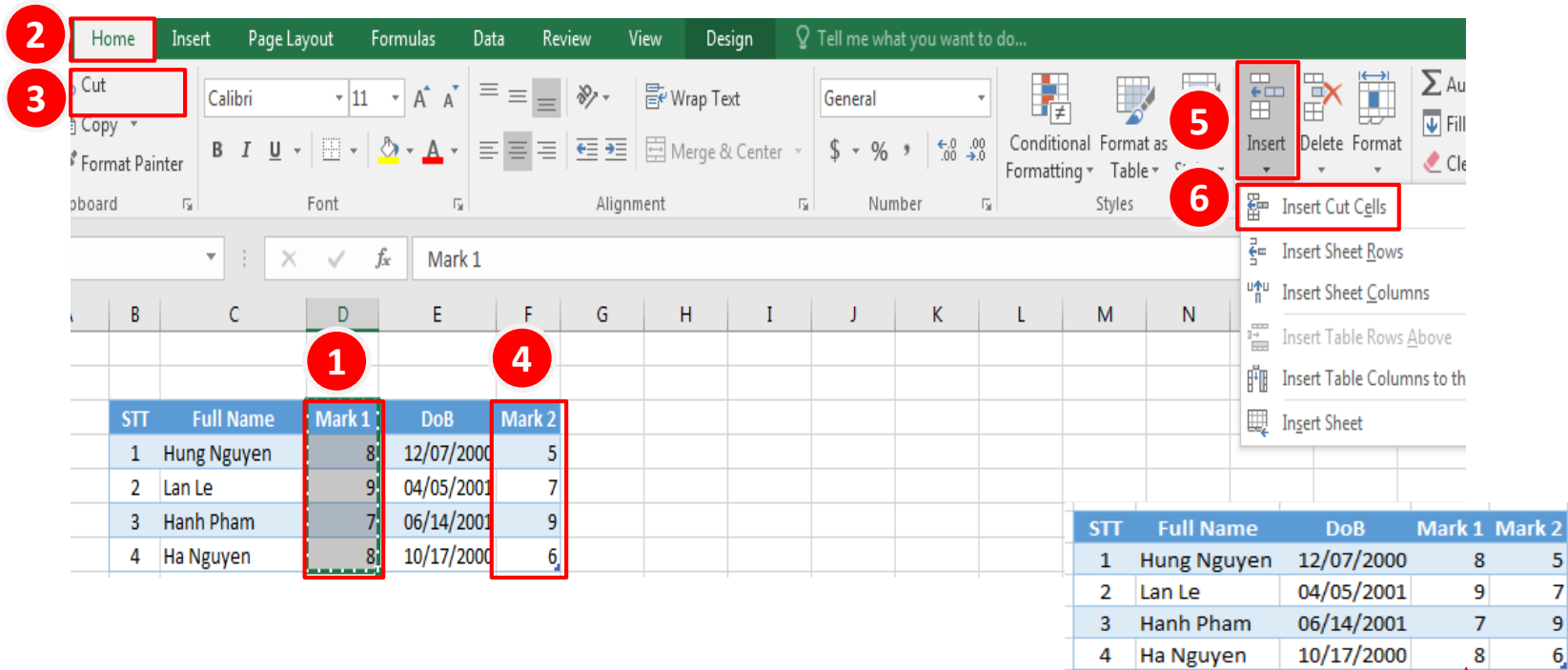


4.3 Construct cells (insert/delete)

1. Insert empty cells/rows/columns
2. Delete cells/rows/columns
- 3. Insert the cut cells/range**
4. Insert the copied cells/range

3- Insert the cut cells/range

- **Steps:** Select the original cells/ranges(1) → tab **Home**(2) → **Cut**(3) (or **CTRL+X**) → select the destination cells/ranges (4) → tab **Home** → **Insert** (5) → **Insert Cut Cells** (6).



The screenshot illustrates the process of inserting cut cells in Microsoft Excel. The original data is selected in the range D4:F7 (labeled 1). The user navigates to the Home tab (labeled 2) and uses the Cut command (labeled 3). The destination range D8:F11 is selected (labeled 4). The user then clicks the Insert button (labeled 5) and chooses the Insert Cut Cells option (labeled 6). The final result shows the original data shifted down by one row, with the new data starting at row 8.

STT	Full Name	DoB	Mark 1	Mark 2
1	Hung Nguyen	12/07/2000	8	5
2	Lan Le	04/05/2001	9	7
3	Hanh Pham	06/14/2001	7	9
4	Ha Nguyen	10/17/2000	8	6

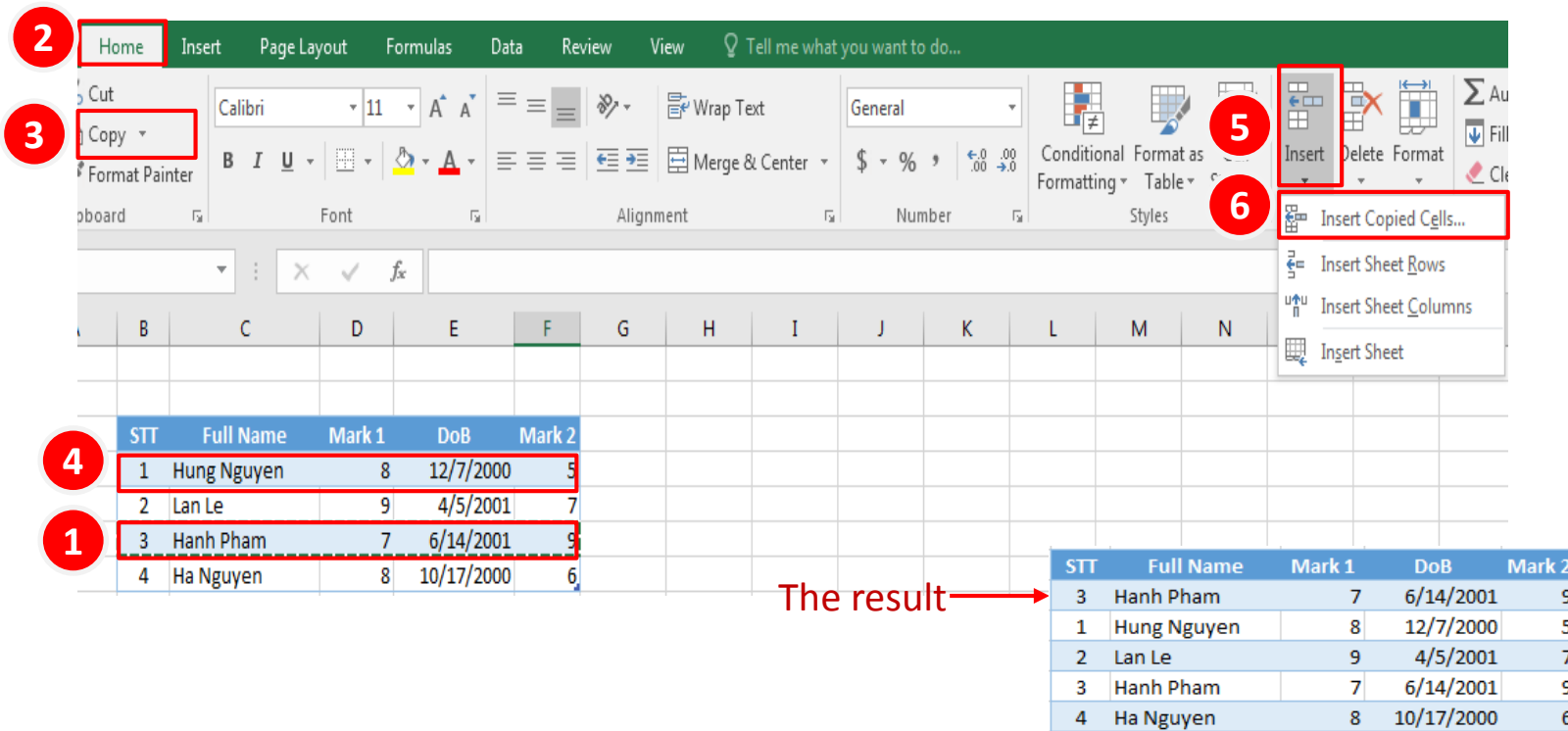
The result

4.3 Construct cells (insert/delete)

1. Insert empty cells/rows/columns
2. Delete cells/rows/columns
3. Insert the cut cells/range
4. Insert the copied cells/range

3- Insert the copied cells/range

- **Steps:** Select the original cells/ranges(1) → tab **Home**(2) → **Copy**(3) (or **CTRL+C**) → select the destination cells/ranges (4) → tab **Home** → **Insert** (5) → **Insert Copied Cells** (6).



The result →

STT	Full Name	Mark 1	DoB	Mark 2
1	Hung Nguyen	8	12/7/2000	5
2	Lan Le	9	4/5/2001	7
3	Hanh Pham	7	6/14/2001	9
4	Ha Nguyen	8	10/17/2000	6

STT	Full Name	Mark 1	DoB	Mark 2
3	Hanh Pham	7	6/14/2001	9
1	Hung Nguyen	8	12/7/2000	5
2	Lan Le	9	4/5/2001	7
3	Hanh Pham	7	6/14/2001	9
4	Ha Nguyen	8	10/17/2000	6

Chapter 4. Manipulating data cells



4.1 Insert data in cells/ranges

4.2 Reuse data (copy/cut – paste)

4.3 Construct cells (insert/delete)

4.4 Apply Auto Fill

4.5 Find and replace data

4.4 Apply Auto Fill

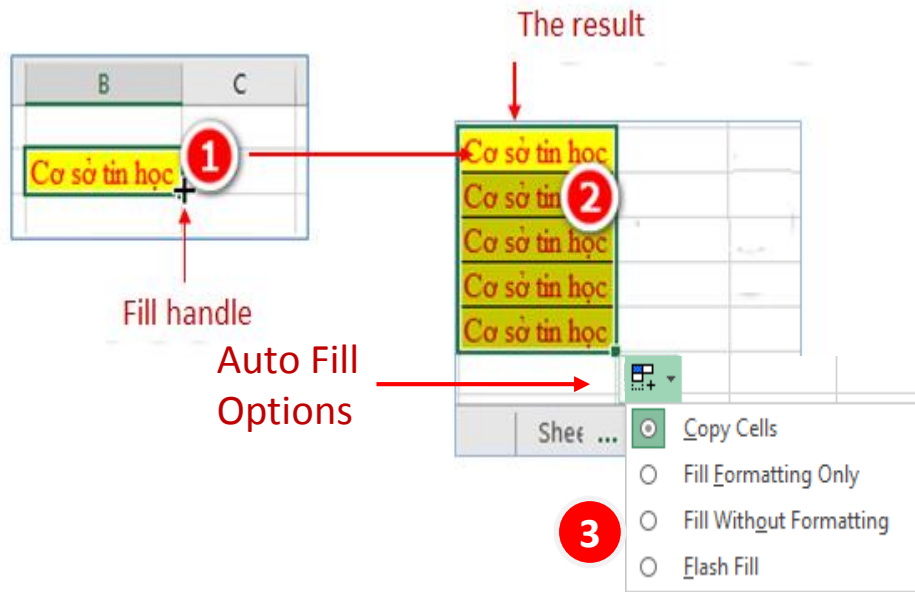
1. Automatically fill normal data
2. Automatically fill a series of numbers
3. Automatically fill a series of dates
4. Automatically fill a built-in custom list
5. Automatically fill a user custom list

4.4 Apply Auto Fill

1. Automatically fill normal data
2. Automatically fill a series of numbers
3. Automatically fill a series of dates
4. Automatically fill a built-in custom list
5. Automatically fill a user custom list

1- Automatically fill normal data

- **Steps:** Select the beginning data cell **(1)** → drag the **Fill Handle** down or to the right **(2)** (place mouse at the lower-right corner of the cell) → select **Auto Fill Options (3)**



➤ Auto Fill Options **(3)**:

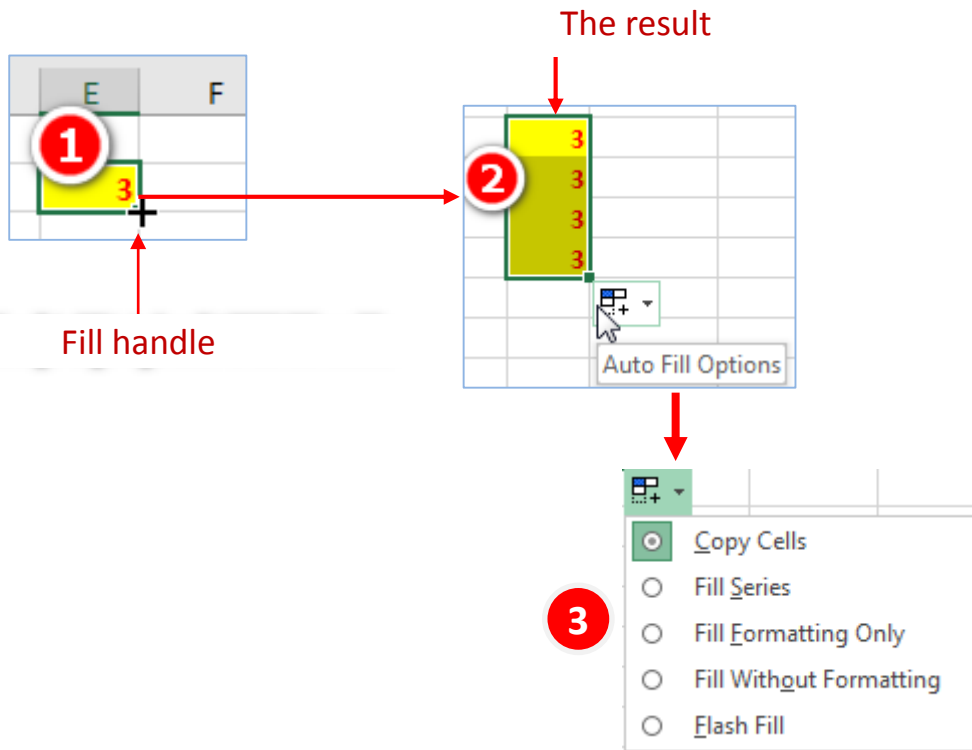
- **Copy Cells:** The value and format are copied
- **Fill formatting only:** Only the format is copied.
- **Fill without formatting:** Only the value is copied
- **Flash Fill:** automatically fill the data when it senses a pattern

4.4 Apply Auto Fill

1. Automatically fill normal data
- 2. Automatically fill a series of numbers**
3. Automatically fill a series of dates
4. Automatically fill a built-in custom list
5. Automatically fill a user custom list

3- Automatically fill a series of numbers

- **Steps:** Select the beginning number cell (1) → drag the **Fill Handle** down or to the right (2) (place mouse at the lower-right corner of the cell) → select **Auto Fill Options**(3).



➤ Auto Fill Options (3):

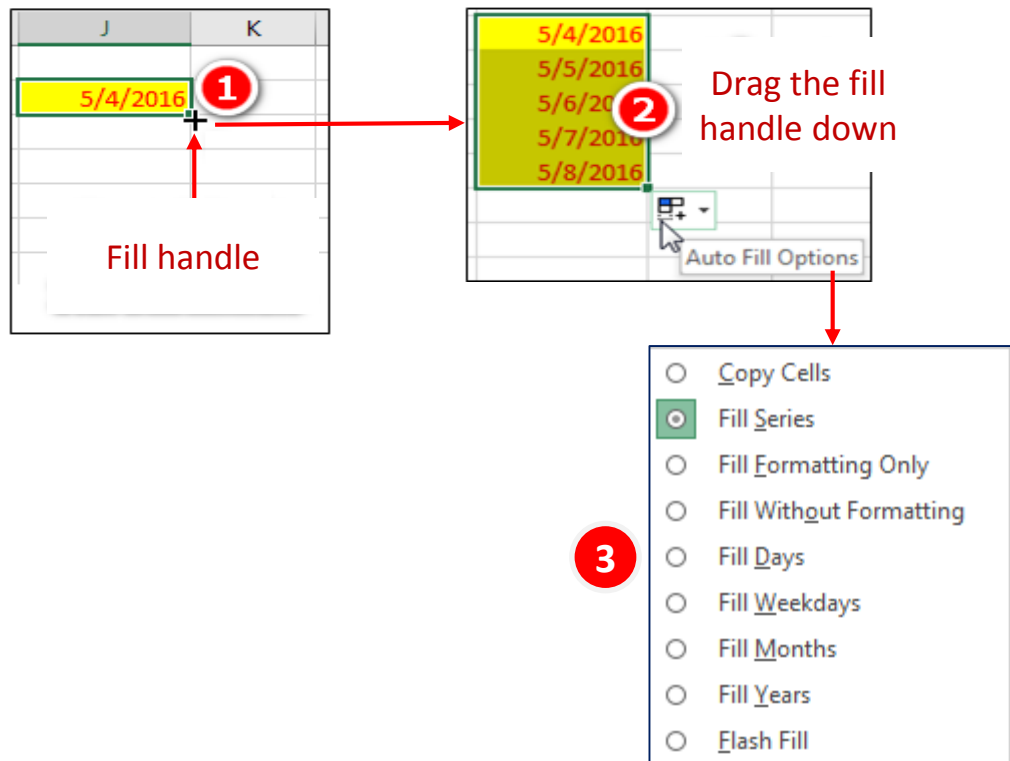
- **Copy Cells:** The value and format are copied
- **Fill Series:** Create an increasing series of number
- **Fill formatting only:** Only the format is copied.
- **Fill without formatting:** Only the value is copied
- **Flash Fill:** automatically fill the data when it senses a pattern

4.4 Apply Auto Fill

1. Automatically fill normal data
2. Automatically fill a series of numbers
3. **Automatically fill a series of dates**
4. Automatically fill a built-in custom list
5. Automatically fill a user custom list

5- Automatically fill a series of dates

- **Steps:** Select the beginning date cell (1) → drag the **Fill Handle** down or to the right (2) (place mouse at the lower-right corner of the cell) → select **Auto Fill Options**(3).



➤ Auto Fill Options (3):

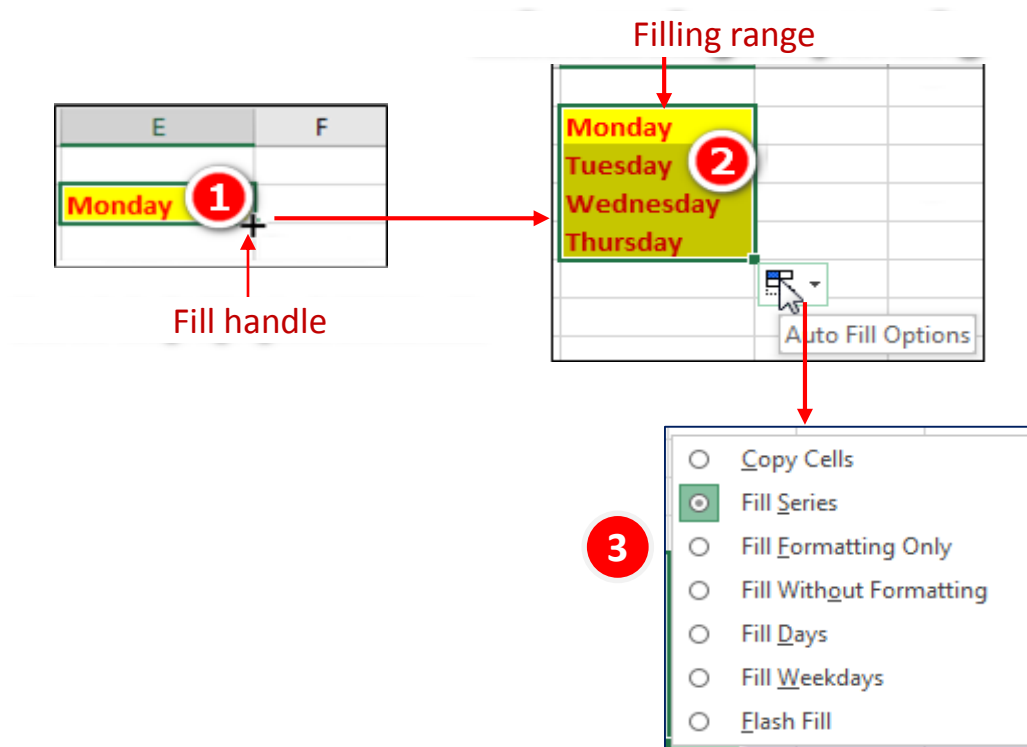
- The four first options and the last option are the same with the options of filling numeric data
- **Fill Days:** Create a day increasing series of dates
- **Fill Weekdays:** Create a day increasing series of dates without Saturday and Sunday.
- **Fill Months:** Create a month increasing series of dates
- **Fill Years:** Create a year increasing series of dates

4.4 Apply Auto Fill

1. Automatically fill normal data
2. Automatically fill a series of numbers
3. Automatically fill a series of dates
- 4. Automatically fill a built-in custom list**
5. Automatically fill a user custom list

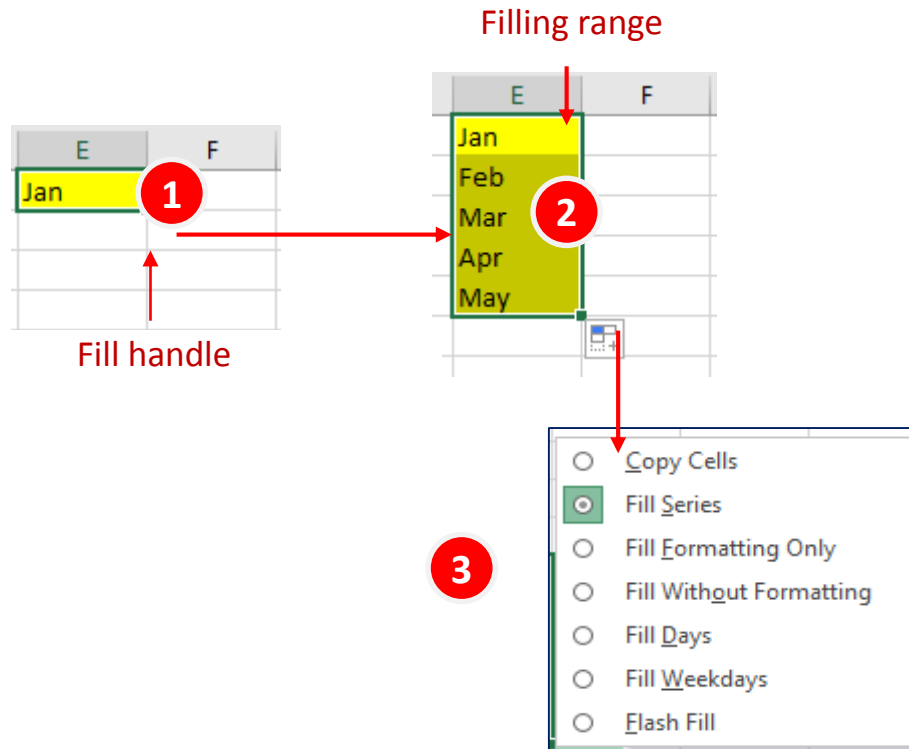
4- Automatically fill a built-in custom list

- **Automatically fill a series of days:** Select the beginning day cell (1)
→ drag the **Fill Handle** down or to the right (2) (place mouse at the lower-right corner of the cell) → select **Auto Fill Options**(3).



4- Automatically fill a built-in custom list

- **Automatically fill a series of months:** Select the beginning month cell (1) → drag the **Fill Handle** down or to the right (2) (place mouse at the lower-right corner of the cell) → select **Auto Fill Options**(3).

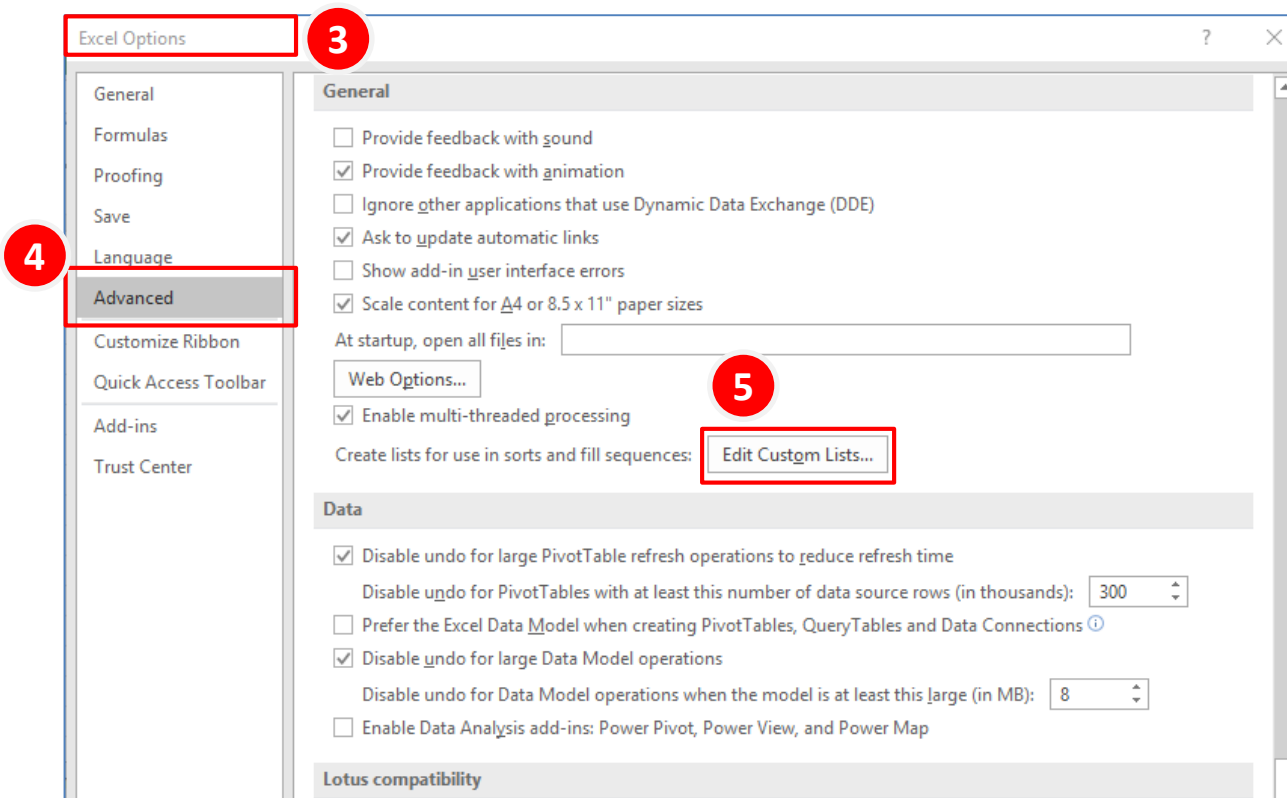


4.4 Apply Auto Fill

1. Automatically fill normal data
2. Automatically fill a series of numbers
3. Automatically fill a series of dates
4. Automatically fill a built-in custom list
5. Automatically fill a user custom list

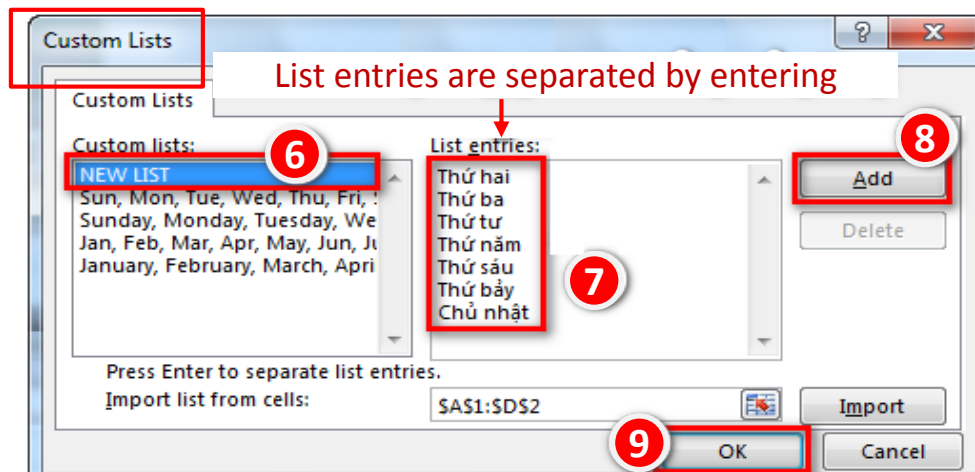
5- Automatically fill a user custom list

- **To create a user custom list:** Tab **File** (1) → **Options** (2) → **Excel Options** is popped up (3) → **Advanced** (4) → **Edit Custom Lists** (5) → **Custom Lists** dialog box is displayed.



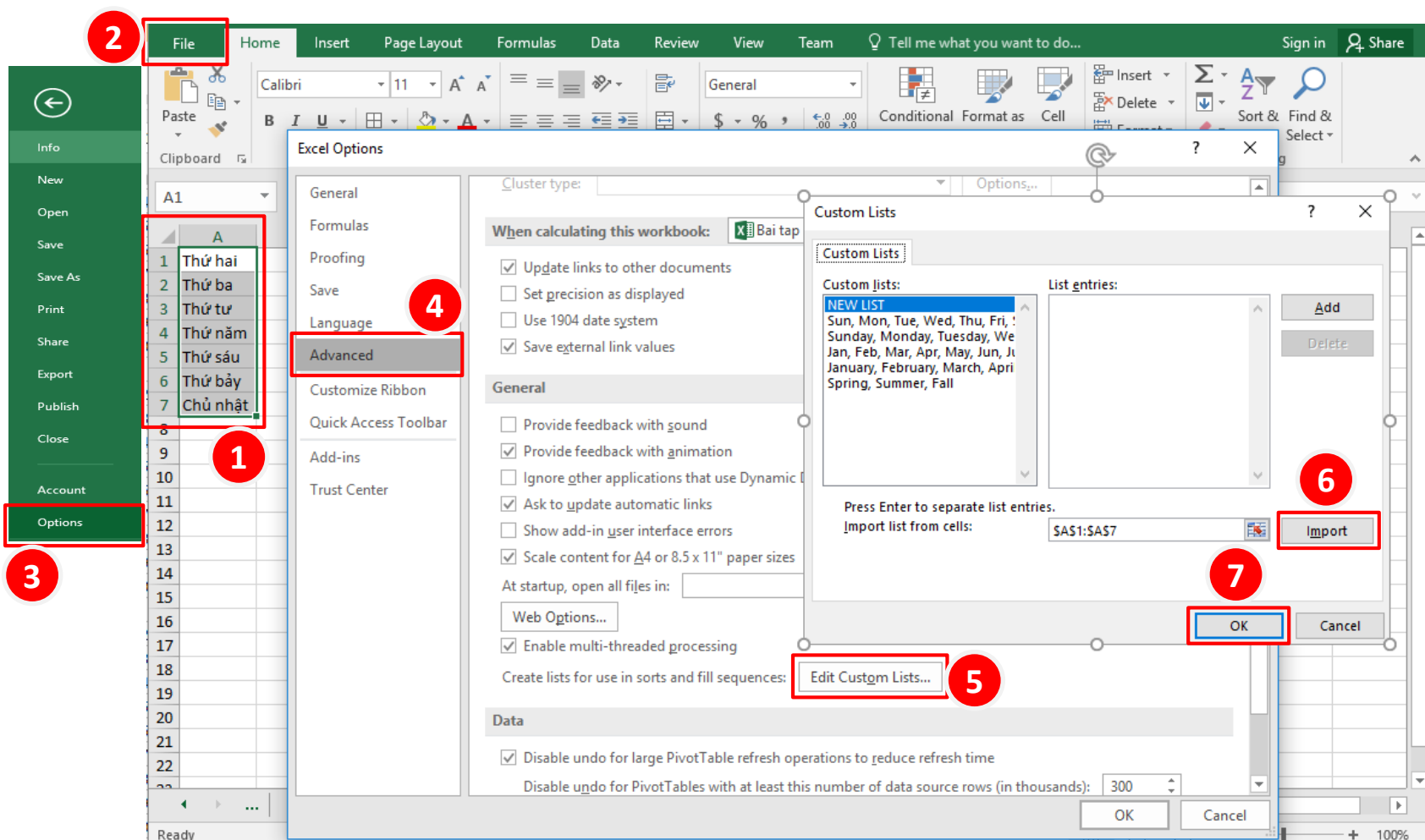
5- Automatically fill a user custom list

- **To create a user custom list (cont):** New List (6) → Enter the list in the List entries pane (7) → Add (8) → OK (9).



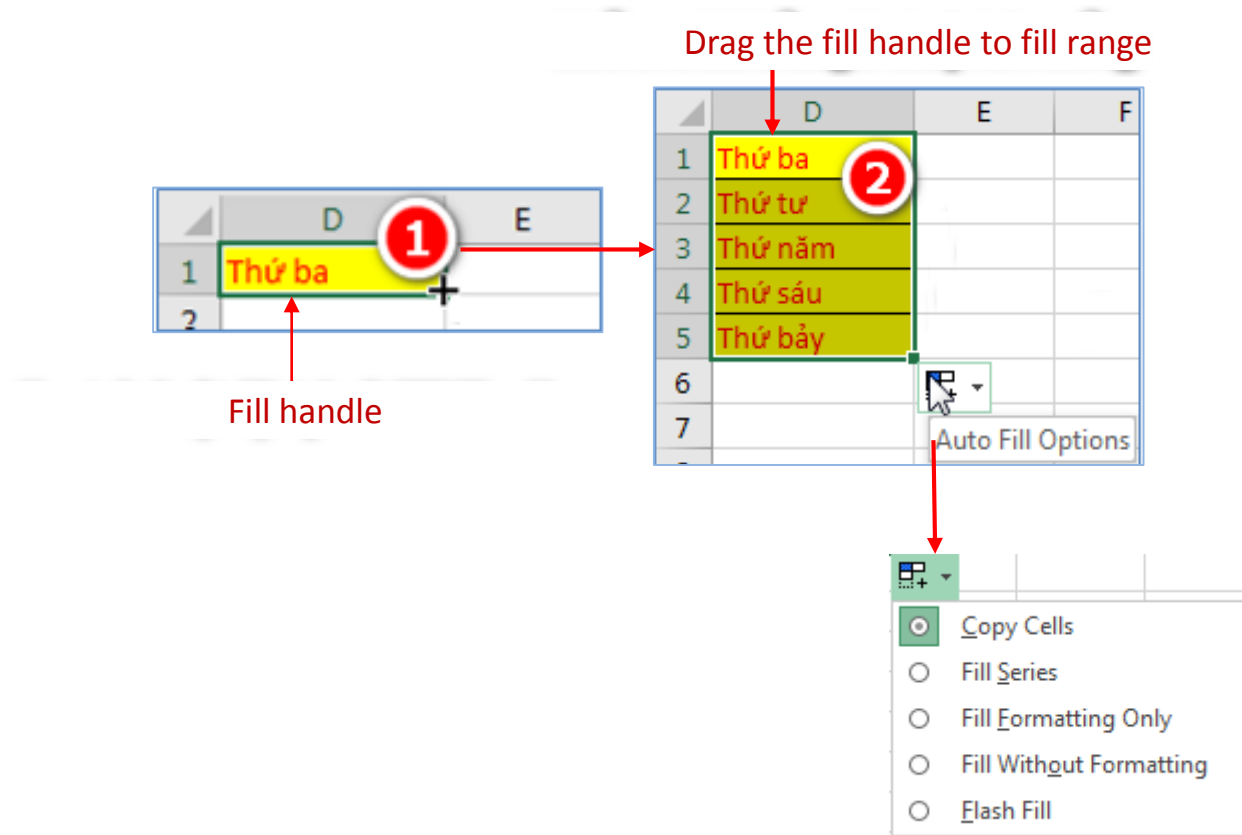
5- Automatically fill a user custom list

- To create a user custom list from a range: Select the range (1) → tab **File** (2) → **Options** (3) → **Advanced** (4) → **Edit Custom Lists** (5) → **Import** (6) → **OK** (7).



5- Automatically fill a user custom list

- To apply the new custom list:



Chapter 4. Manipulating data cells



4.1 Insert data in cells/ranges

4.2 Reuse data (copy/cut – paste)

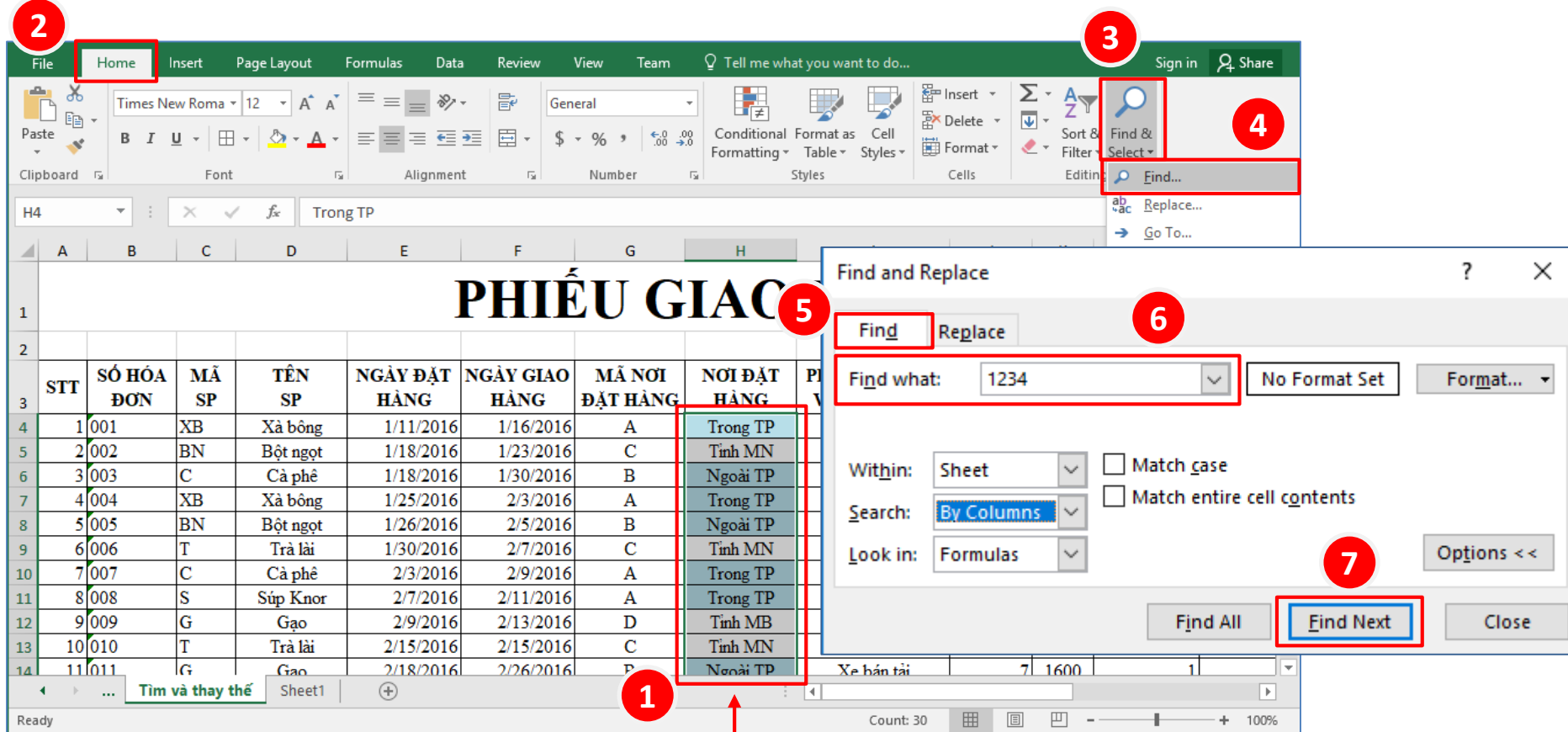
4.3 Construct cells (insert/delete)

4.4 Apply Auto Fill

4.5 Find and replace data

4.5 Find and replace data

- To find data:



Find and Replace

Find Replace

Find what: 1234 No Format Set Format...

Within: Sheet Match case

Search: By Columns Match entire cell contents

Look in: Formulas Options <<

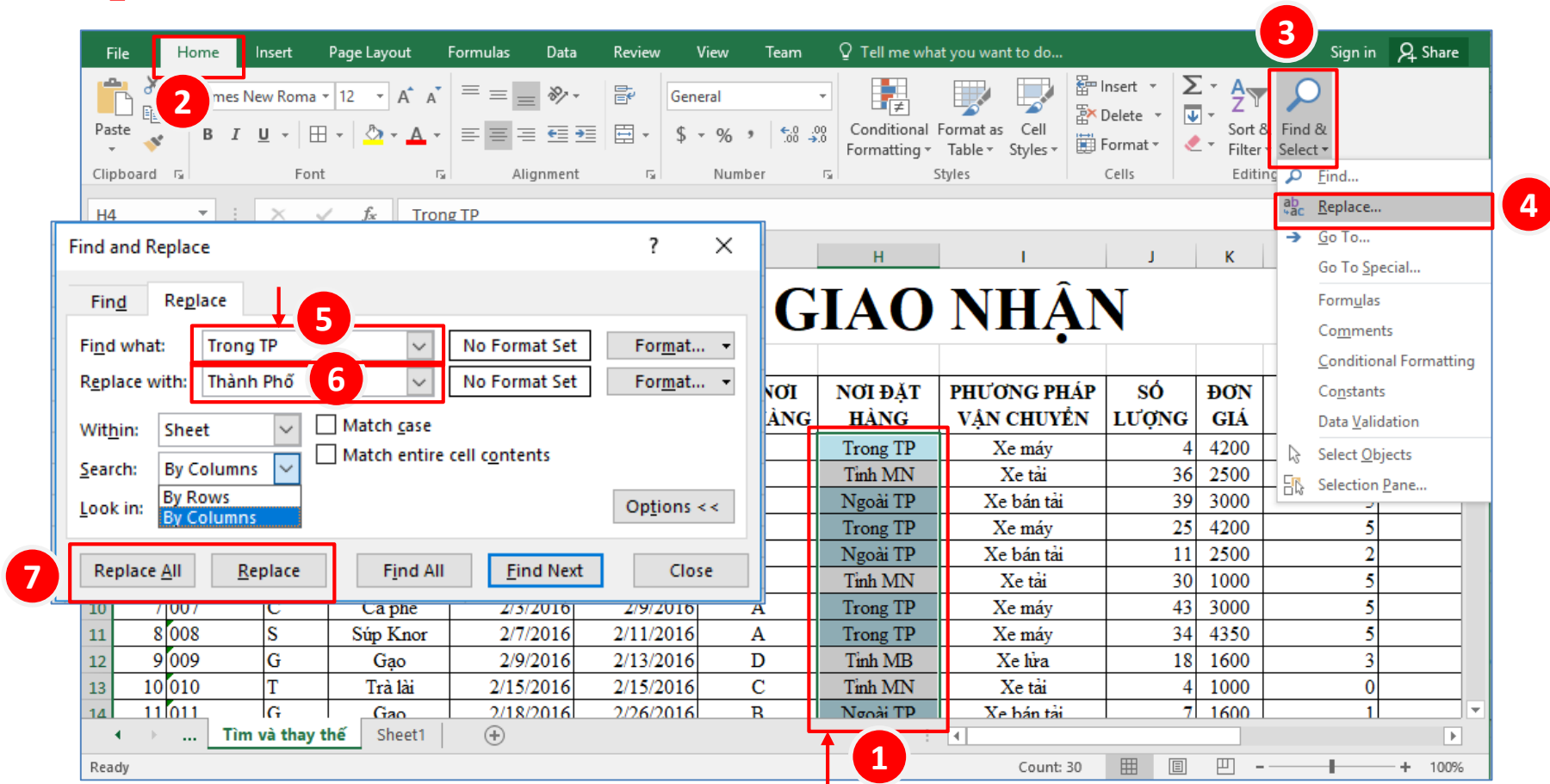
Find All Find Next Close

STT	SỐ HÓA ĐƠN	MÃ SP	TÊN SP	NGÀY ĐẶT HÀNG	NGÀY GIAO HÀNG	MÃ NƠI ĐẶT HÀNG	NƠI ĐẶT HÀNG
1	001	XB	Xà bông	1/11/2016	1/16/2016	A	Trong TP
2	002	BN	Bột ngọt	1/18/2016	1/23/2016	C	Tỉnh MN
3	003	C	Cà phê	1/18/2016	1/30/2016	B	Ngoài TP
4	004	XB	Xà bông	1/25/2016	2/3/2016	A	Trong TP
5	005	BN	Bột ngọt	1/26/2016	2/5/2016	B	Ngoài TP
6	006	T	Trà lá	1/30/2016	2/7/2016	C	Tỉnh MN
7	007	C	Cà phê	2/3/2016	2/9/2016	A	Trong TP
8	008	S	Súp Knor	2/7/2016	2/11/2016	A	Trong TP
9	009	G	Gạo	2/9/2016	2/13/2016	D	Tỉnh MB
10	010	T	Trà lá	2/15/2016	2/15/2016	C	Tỉnh MN
11	011	G	Gạo	2/18/2016	2/26/2016	P	Ngoài TP

Select the range to find

4.5 Find and replace data

- To replace data:



Find and Replace

Find what: Trong TP
Replace with: Thành Phố
Within: Sheet
Search: By Columns
Look in: By Columns

Replace All Replace Find All Find Next Close

NOI	NOI ĐẶT	PHƯƠNG PHÁP	SỐ	ĐƠN
ANG	HÀNG	VẬN CHUYỂN	LƯỢNG	GIÁ
	Trong TP	Xe máy	4	4200
	Tỉnh MN	Xe tải	36	2500
	Ngoài TP	Xe bán tải	39	3000
	Trong TP	Xe máy	25	4200
	Ngoài TP	Xe bán tải	11	2500
	Tỉnh MN	Xe tải	30	1000
	Trong TP	Xe máy	43	3000
	Trong TP	Xe máy	34	4350
	Tỉnh MB	Xe lửa	18	1600
	Tỉnh MN	Xe tải	4	1000
	Ngoài TP	Xe bán tải	7	1600

Select the range to find and replace

Chapter 4. Manipulating data cells



4.1 Insert data in cells/ranges

4.2 Reuse data (copy/cut – paste)

4.3 Construct cells (insert/delete)

4.4 Apply Auto Fill

4.5 Find and replace data